

Vol. 12

TAMPA, FLORIDA, APRIL, 1931

No. 4

Forty-Fourth Annual Meeting Florida State Horticultural Society

Miami, Florida, April 14, 15, 16, and 17, 1931.

The Forty-Fourth Annual Meeting of the Florida State Horticultural Society will be held in the dining-room of the Columbus Hotel, Miami, opening on Tuesday evening, April 14th and continuing through Friday, April 17th. The Columbus Hotel is on Biscayne Boulevard, just off Flagler Street and faces Bay Front Park and Biscayne Bay.

The meetings are open to the general public and all who are interested are cordially invited to attend.

Officials In Charge

President John S. Taylor of Largo will preside during the meetings. He will be ably assisted by the Vice-Presidents, Chas. I. Brooks of Miami, S. F. Poole of Lake Alfred and William L. Wilson of Panama City. The Secretary is Bayard F. Floyd of Davenport; the Treasurer is Norman A. Reasoner of Oneco. They, with the Assistant Secretaries W. W. Yothers of Orlando and J. Lee Smith of Gainesville, will have desks in the lobby and in the foyer off the dining-room where they will furnish information, register members and receive applications for membership. The

members of the Executive Committee, W. L. Drew of Eagle Lake, H. Harold Hume of Jacksonville, and Frank Stirling of Davie will greet the members and do all they can to make the meeting a success.

The local committee on arrangements includes our genial Charley Brooks; J. S. Rainey, County Agricultural Agent of Dade County; J. Gerry Curtis, Director of Parks and Recreation of Miami; Mrs. Mary Drake of Miami; C. H. Steffani, County Agricultural Agent of South Dade County.

Registration

All members are requested to register at the Secretary's desk in the lobby promptly upon arrival. A badge will be given all who register. Please wear this badge at all sessions and to all social functions.

Membership

Those who have not mailed their membership dues to the Secretary or Treasurer can pay them at this time. Please see that your name and address is written fully and plainly on the receipt. The mailing list for the Proceedings is made up from these and confusion results if the addresses are not complete.

New Members

Those wishing to become members will make application at the desk of either the Secretary or Treasurer. The Annual membership dues are \$2.00; the Perennial membership \$10.00; the life membership \$25.00; and the Patron membership \$100.00. The privileges of the Society include the receipt of a copy of the Proceedings, which is a book of more than 200 pages, containing all papers and discussions before the Society in full.

Assembly Hall

All sessions of the Society, unless otherwise announced at the meeting, will be held in the dining room on the 17th floor of the Columbus Hotel. The room is large with low windows giving a beautiful view out over Miami Beach and the Atlantic Ocean. Amplifiers are installed that will enable the speakers to be easily heard in all parts of the room. Four elevators will give prompt service to and from the first floor.

Program

An unusually good program has been arranged. All phases of citrus growing and the handling of fruit will receive attention. The culture of
(Continued on page 29)

New Legume, Crotalaria Proves Value as Cover Crop In South

Crotalaria, a new legume which was introduced in Florida in 1909 by the U. S. Department of Agriculture, has proved so desirable as a green manure crop in the South that the department has issued Circular 137-C, in which Roland McKee and C. R. Enlow report a comprehensive study of the new crop.

Of the 600 species of the genus crotalaria, 5 are native to the Eastern United States. Seed of other species has been imported from tropical countries and sent to the Florida Agricultural Experiment Station at Gainesville, from which its culture has extended to other Southern States. Circular 137-C, Crotalaria, a New Legume for the South, reports on 36 of the species, tests of half of those species having been made in other Southern States as well as Florida. A few species grow successfully farther north, but do not seed.

The authors consider Crotalaria adapted to sandy and other light, well-drained soils. Two of the species, Crotalaria striata and C. spectabilis, have shown especial promise, have produced large quantities of forage, and are being used commercially in the United States.

Time of seeding varies with latitude, but in general crotalaria should be planted about the same time as corn. C. Striata and C. spectabilis have made excellent growth as far north as Columbia, S. C., but they are short-lived plants that must be treated as summer annuals under conditions in this country.

Crotalaria striata has been grown the more extensively, its principal use being as a green-manure crop, and several thousand acres are now grown in Florida, mostly in young citrus groves. Older groves furnish too much shade for crotalaria to grow well. It has also been grown to advantage in corn and early potato areas, as well as on land to be used for growing winter truck crops.

Both Crotalaria spectabilis and C. striata are used to some extent in pecan groves of the coastal plains of the Southeastern States, the former in particular becoming popular for this purpose. In Florida Crotalaria striata can be planted successfully in

corn at the last cultivation, about June 1, and when not disturbed will generally mature and re-seed itself.

Both species successfully combat summer weeds, experiments showing that although weeds may have completely covered crotalaria in its early stages of growth, it is able eventually to take possession of the field.

Crotalaria is plant host to several insects, but in this country the only ones doing damage are the bella moth, larvae of which develop in the pods and destroy the seeds, and the pumpkin bug, which feeds on the pods. There are several crotalaria diseases, but so far as observed, none is serious.

The value of Crotalaria as a cover crop is assured but its value as forage is undetermined. It has been demonstrated that the yield over a three-year period has averaged three times that of cowpeas, four times that of velvet beans, and three times that of beggarweed. Certain species have been reported as poisonous to animals when eaten green, and other species have been suspended, but the authors consider that with possibly two exceptions "the genus as a whole may be regarded as merely under suspicion, until more direct evidence is forthcoming."

Although limited feeding tests indicate that crotalias are not usually relished by livestock as green feed, some of the species can be successfully used for hay. The yield, though reduced by cutting back, is of much higher quality and higher protein content by cutting two or three times per season.

Many species of Crotalaria have large showy flowers and a few species are well suited for ornamentals. C. retusa has long racemes of showy yellow flowers, with the back of the standard shaded or striped purple. It is suitable for borders, and will supply September bloom as far north as Washington, D. C. It is also of value as a greenhouse plant for cut flowers.

At present only the seed of Crotalaria striata and C. spectabilis are available commercially. Most crotalias ripen seed over a long period, and since the pods burst and scatter the seeds when mature, hand picking

is the common method. Until 1926 the crotalaria seed used in the United States was grown in Florida, but not in quantities to warrant developing machinery for harvesting. With increased demand in 1927-28, the greater part of the seed planted was imported from Porto Rico.

The new legume and its culture are described in Circular 137-C, which may be obtained free from the Office of Information, Department of Agriculture, Washington, D. C.

A Note on the Splitting of Valencias

By E. L. Lord, Professor of Pomology
University of Florida

Several years ago it came to my attention that splitting of Valencias was very rare on soils that contained a large proportion of lime, such as the heavy hammock soils of the Indian River area. In consequence, I suggested to various students of mine who were handling groves, that they try light applications of calcium carbonate (ground limestone or wood ashes) on groves where there was a history of heavy Valencia splitting. 100 to 200 pounds of ground lime rock or 150 to 250 pounds of wood ashes were applied to parts of these groves, the remainder being left without the lime as check plots, since Valencia splitting is much worse some seasons than others. In all cases there has been a great reduction of splitting on the limed plots. This lime should be in the carbonate form (as ground limestone or wood ashes) and should be applied very evenly throughout the grove just as if no trees were on the land. It should not be applied to all the grove, but to a small part, so that any effect on splitting may be noticed. It is not at this time recommended as a general remedy for splitting, but rather as a promising method which deserves further trial. It may not be satisfactory on all soils. Care should be taken to apply it evenly and not in excess of the amounts mentioned. April appears to be a good month for this application.

Coloring Fruits And Vegetables

The National Board of Fire Underwriters, in its capacity of adviser to patrons to buyers of fire insurance, has issued a timely pamphlet on the coloring of fruits and vegetables, which contains so much valuable information that it is gladly reproduced herewith for the timely interest to packers of citrus fruits:

Coloring Fruits and Vegetables

The coloring of citrus fruits has been practiced for a number of years and is now very common. Methods have been employed to some extent for the coloring of various other fruits such as bananas, apples and pears. Coloring of tomatoes and blanching of celery have also been practiced by similar methods.

In this pamphlet no reference will be made to fruit ripening. Although the processes considered may produce a ripening effect the principal purpose is to produce a color in the fruit or other product which will make it more salable in the market. This change in color is brought about by the destruction of the green coloring matter in the surface, called chlorophyll.

The modern methods of coloring seem to have developed from the process formerly used to color lemons. These were kept in storage under proper humidity and temperature; the temperature being maintained by the use of kerosene stoves. When the old type of kerosene stove was replaced by the more modern odorless type, it was noticed that less desirable results were obtained. An investigation into the cause of this change led to the conclusion that it was the gas from the kerosene stove that was chiefly responsible for the coloring, and thus the use of kerosene stoves adjusted to render incomplete combustion came into general use for the coloring of citrus fruits.

Just what component of the gases of combustion from a kerosene stove is responsible for the coloring has never been determined, but in an attempt to discover this by trying various gases which it was thought might be responsible, it was found that ethylene worked very satisfactorily and the use of this gas is largely replacing the use of kerosene stoves.

The use of ethylene in the very small quantities which are necessary

for coloring, and when properly arranged, presents less fire hazard than the use of kerosene burners as usually found.

The original method of employing ethylene was to administer it in doses into the room, box car, tent or other enclosure containing the product to be colored. Some of these early methods were rather crude and not subject to an accurate determination of the amount of ethylene used. Various methods of heating were used to keep the temperature at its most desirable point, around 85° F., such as kerosene heaters, steam pipes or radiators and electric heaters. It was found that without some air circulation the temperature would not be uniform throughout the coloring room, so fans were used to circulate the air and keep a uniform temperature at top and bottom and thermostatic control was introduced to keep the temperature close to 85° F. and never above 90° F. Another development was to provide continuous ventilation. If this is not done the coloring room must be opened up at intervals, for fruits in coloring give off carbon dioxide which is detrimental to the coloring process if allowed to get above a certain small percentage. These requirements for circulation and ventilation brought on the continuous flow method of admitting ethylene, commonly known as the "trickle system," in which a very small quantity of ethylene is continuously flowing into the duct of the blower system furnishing recirculation and ventilation.

The best coloring requires an atmosphere of proper humidity, which for citrus fruits is about 85 per cent relative. Humidity is often under automatic control and is maintained by injecting live steam or water spray into the air duct or into the room itself.

Some Properties of Ethylene

Ethylene is sold in steel cylinders in the form of a compressed, non-liquefied gas, under a pressure of 1,112 pounds per square inch at a temperature of 70° F. The ordinary cylinder contains 25 pounds of ethylene, or 336 cubic feet at atmospheric temperature and pressure.

Ethylene is slightly lighter than air, having a specific gravity of 0.976 relative to that of air. Being so nearly the same density as air, it diffuses

very rapidly, i. e., it does not settle to the floor or stay in one place in the room but quickly distributes itself throughout the whole room.

Ethylene is a flammable gas which burns in air when the proportion of ethylene to air is between 3 and 34 per cent. When mixed with air in these proportions an ignition by electric spark, flame or heated surface will result in an explosion.

Ethylene in large concentrations is used as an anaesthetic.

Coloring with Gas from Kerosene Burners

One of the earliest methods of fruit coloring was the placing of kerosene burners in fruit coloring rooms or under tarpaulins with the fruit; this practice has been responsible for several serious fires and should be prohibited.

When the gases of combustion from kerosene burners are used for coloring, the burners shall be located in a suitably detached burner house or may be located in a room of the packing house or other building if the room is used for no other purpose and has enclosing walls of 8 inches of brick, 6 inches of reinforced concrete, or their equivalent in fire resistance and stability and has a roof of 4 inches of reinforced concrete or other suitable fire-resistive construction. This room shall have no openings into the building except that gas flue may pass through the walls.

The distance from burner house to other buildings should be such that fire in the burner house due to an overflow of kerosene or other cause would not be likely to set fire to the other buildings. The distance necessary to assure reasonable safety against such an occurrence will depend on the type of construction of the burner house and type of construction of the other buildings, and may be influenced by other features such as the kind of protection against overflow of kerosene and the quantity of kerosene stored.

A burner house built entirely or in part of combustible material shall be at least 25 feet away from the packing house and other buildings. If within 25 feet it shall be built entirely of incombustible material, and any part of it within 5 feet shall be built of brick with concrete roof, and

(Continued on page 27.)

Spanish Orange Exports Show Decrease

In a report published by the Department of Commerce, Mr. S. R. Thompson, American Consul, Valencia, Spain, covering the October to December 1930, quarter, states that with the object of improving foreign markets for Spanish oranges by insuring their arrival in good condition, the Spanish government on October 11, 1930, promulgated a decree regulating the exportation of oranges and providing for inspection of all shipments and the supervision of all loading and storing by official inspectors. This decree also provided for the registration of all exporters of oranges, prohibited the exportation of oranges from Spain which were not of a prescribed degree of ripeness, and established regulations in regard to storing oranges in vessels, which vessels were not permitted to spend more than three working days in loading oranges nor to touch more than two ports before clearing for their final destination.

Mr. Thompson adds that there was considerable protest at Valencia at such export regulations; a committee of orange growers, exporters, chambers of commerce representatives and mayors of principal cities of orange districts, went to Madrid to protest. As a result, the Spanish government modified the original regulations November 3, 1930, permitting vessels to touch at more than two ports before clearing for final destination provided the total period spent in loading the vessel did not exceed six days from the date when the first load of oranges was taken on board.

The Valencia office of the Spanish Agronomy Service is in charge of orange inspections, having enforced the regulations since their inception.

The 1930 Spanish orange-export crop was somewhat late in reaching the market, due to warm weather up late in the Autumn and a lack of rain. First shipments were made during the first week of November, all to the United Kingdom excepting a small shipment to Hamburg (Germany). Due to the new inspection service the oranges were better se-

lected and seasoned than in former years.

Exports of oranges from Spain during the October to December, 1930, quarter showed a decrease of about 500,000 cases as compared with a similar period of 1929—a decrease of nearly 12 percent. Exports to the United Kingdom—the principal foreign market and to Germany were less while those to the Netherlands, Norway, and Sweden were larger. However, 1929 exports to the United Kingdom were excessive, depressing the market.

Opening London auction prices for Spanish oranges, on November 17, 1930, averaged 16 shillings (roughly \$3.35) a case, with some sales bring-

ing 25 shillings (or \$6.00) a case—a satisfactory price. By the end of November, however, prices fell to 11 shillings (roughly \$2.65) a case. This price was reported to hardly cover the exporter's expenses, in view of the relatively high price which he paid for the fruit. The Christmas season did not bring improved prices and prices continued to decline, running 8 to 9 shillings (roughly \$1.90 to \$2.15 a case. It should be noted though that these end-of-year prices were 1 shilling higher than those at the end of the year 1929. On the whole, exporters are reported disappointed with the export season for Spanish oranges during the October to December 1930, quarter.

Secretary Hyde Appoints Rowher Assistant Chief of Entomology

S. A. Rowher, assistant chief of the Plant Quarantine and Control Administration, U. S. Department of Agriculture, has been selected by Secretary Hyde and Dr. L. C. Marlatt, Chief of the Bureau of Entomology, to become assistant chief of the Bureau of Entomology, an office made vacant recently by the resignation of John E. Graf. Mr. Rowher took up his new duties April 1.

Secretary Hyde, in commenting on the appointment said: "Mr. Rowher has made a rare contribution to the important regulatory work of the Plant Quarantine and Control Administration. Lee A. Strong, chief of that Administration, although reluctant to lose Mr. Rowher's services has concurred in order that the Bureau of Entomology might have an executive in the the important position of assistant chief who is already familiar with the bureau's manifold responsibilities."

Mr. Rowher attended the University of Colorado, and entered the Bureau of Entomology in 1909. His first task was a study of forest tree insects. Later he was placed in charge of this work for the eastern

district of the United States.

Throughout his services with the Bureau of Entomology Mr. Rowher has been interested particularly in identifying and classifying insects, and was in charge of this work in the bureau for several years.

In 1927 he became business manager for the bureau, and in addition to his other duties, helped to reorganize the regulatory work of the department under a new unit, the Plant Quarantine and Control Administration. When this unit began work on July 1, 1928, he became assistant chief.

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Preliminary Program 44th Annual Horticultural Society Meeting

**COLUMBUS HOTEL, MIAMI, FLO-
RIDA, APRIL 14, 15,
16, and 17, 1931**

Tuesday, April 14, 7:30 P. M.

Call to Order — Pres. John S. Taylor
Largo
Invocation — Dr. Wm. G. Clinton,
Miami Tamiami Temple M.E.Church
Address of Welcome — Mayor C. H.
Reeder, Miami
Response for Society
President's Annual Address
Adjournment to witness Pageant Pan-
American Day Celebration—
Bay Front Park, Miami

Wednesday, April 15, 9:30 A. M.

Address — "The Trend of Fertilizer
Practices," J. J. Skinner, U. S. D.
A., Washington, D. C.
Address — "The Importance of Cal-
cium in Citrus Culture," Grey
Singleton, Ft. Meade.
Address — "The Importance of Cer-
tain Special Elements in the Agri-
culture of South Florida," R. V. Al-
lison, Everglades Experiment Sta-
tion, Belle Glade.
Address — "Citrus Grove Practices
in the High Pine Lands," N. H.
Vissering, Babson Park.
Address — "Citrus Grove Practices
in the Hammock Lands," W. E.
Evans, Vero Beach.
Address — "Citrus Grove Practices
in the Rocky Lands of Dade Coun-
ty," C. H. Steffani, Homestead.

Wednesday, April 15, 2:00 P. M.

Address — "Comparison of *Crotalaria*
Striata and *Crotalaria Spectabilis*
as to the Abundance of Plant
Bugs," J. R. Watson, Agricultural
Experiment Station, Gainesville.
Address — "Cryptolæmus Lady Beet-
les as a Control for Mealy Bugs,"
W. L. Thompson, Citrus Experi-
ment Station, Lake Alfred.
Address — "Some new Bases for
Weather Forecasting," Dr. M. R.
Ensign & B. F. Dostal, U. of Fla.,
Gainesville.
Address — "Insects and Mite En-
emies Attacking Citrus Trees in Ha-
waii," W. W. Yothers, U. S. D. A.,

Orlando.

Garden Party — Guests of Dr. & Mrs.
David Fairchild, The Kampong, Co-
conut Grove — 4:30 to 6:00 P. M.

Wednesday, April 15, 8:00 P. M.

Address — "Some Plant Introduction
Experiences," Dr. David Fairchild,
U. S. D. A., Coconut Grove.
Address — "The Utilization of Cit-
rus Fruits," Miss Flavia Gleason,
State College, Tallahassee.
Address — "Sun Rays and Plant
Life," Dr. Otto Sieplein, University
of Miami, Coral Gables.
Address — "Landscape Material In-
digenous to Tropic Florida," K.
Dahlberg, Miami.
Address — "The Culture of Orchids,"
T. A. Fennell, Homestead.
Address — "Chayotes," G. M. Dickin-
son, DeLand.
State Flower Show on Mezzanine
Floor

Thursday, April 16, 9:30 A. M.

Address — "The Growing of Pineap-
ples on the Lower East Coast," R.
A. Carlton, West Palm Beach.
Address — "Avocado Varieties—Sel-
ections for Planting," Leonard H.
H. Toy, Sub-Tropical Experiment
Station, Homestead.
Address — "The Composition of Flo-
rida Avocados," A. L. Stahl, Agri-
cultural Experiment Station, Gain-
esville.
Address — "Papayas," Bronson Bay-
less, Coral Gables.
Address — "The Cajeput Tree," A.
H. Andrews, Estero.
Address — "Bamboos," Col. James
Prentice, Coconut Grove.

Thursday, April 16, 2:00 P. M.

Address — "Citrus Coloring and the
Decay of Fruit in Transit," J. R.
Winston, U. S. D. A., Orlando.
Address — "Decays in Citrus Fruits,"
H. R. Fulton & H. E. Stevens, U.
S. D. A., Orlando.
Address — "Some New Citrus Hy-
brids of Florida," T. Ralpr Robin-
son, U. S. D. A., Washington D. C.
Address — "Transit Conditions of
Export Citrus Fruit," M. A. Hyde,
Jacksonville.

Address — "Refrigeration Work at
the Agricultural Experiment Sta-
tion," A. F. Camp, Gainesville.
Visit to Pan-American Flying Fields

Thursday, April 16, 8:00 P. M.

Address — "Standards of Maturity
of Citrus Fruits," Clinton Bolick,
Ft. Myers, R. P. Burton, Leesburg,
W. E. Sexton, Vero Beach.
Address — "Enforcement of the
Plant Quarantine Act," Lee A.
Strong, U. S. D. A., Washington,
D. C.
Address — "Plant Movement Thru
Air Transportation Terminals,"
Dr. J. H. Montgomery, State Plant
Board, Gainesville.
Report of Legislative Committee,
Frank Stirling Chairman.
Business Session.

Friday, April 17th, 8:30 A. M.

8:30 A. M. Motorcade leaves from
front of Columbus Hotel.
9:00 A. M. Stop at Matheson Ham-
mock.
10:00 A. M. Stop at Chapman Field
—Plant Introduction Garden.
12:00 Noon. Leave for Homestead
Golf and Country Club—Home-
stead.
12:30 P. M. Luncheon.
1:30 P. M. Program to be an-
nounced.
2:30 P. M. Motorcade to points to
be announced.

ORNAMENTAL TREES

Lawson Cypress (*Cupressus law-
soniana*)
Loquat (*Eriobotrya japonica*)
Magnolia grandiflora
*Monkey-Pod Tree (*Pithecolobium
dulce* and *P. unguis-cati*)
Mango
Monkey-Puzzle Tree (*Araucaria
imbricata*)
Norfolk Island Pine (*Araucaria
excelsa*)
Oak, Live (*Quercus virginiana*)
Oak, Laurel (*Quercus laurifolia*)
Oak, Water (*Quercus nigra*)
Oak, Willow (*Quercus phellos*)
Olive (*Olea europaea*)
Orange (*Citrus sp.*)
Palm—in variety

Frozen Orange Juice For Home Consumption

With the recent shipments of solidly frozen orange juice in carload lots from Tampa, Florida, to cities east and north and with its delivery to homes in retail quantities along with the morning milk, an advanced method of preserving freshness and a maximum of vital food elements, together with an economic system of delivery to the consumer, has been inaugurated.

Oranges have long since ceased to be a luxury, or suitable principally for juvenile stockings at Christmas time; medical science has discovered their therapeutic potency and dietitians have proclaimed their nutritive value. But the dual problem of preserving original freshness and of economic delivery to the consumer in the most convenient form has heretofore remained unsolved.

Equipped with specially designed machinery in its Tampa plant, the National Juice Corporation, a division of National Dairy Products Corporation, has launched a new industry for the marketing not of oranges, but of the extracted orange juice, which in some quarters is regarded as rapidly taking its place with milk in the American family menu. The new company is undertaking to capture the tree-freshness of the Florida orange, preserve it in convenient packages and deliver it ready for daily use through already established channels of distribution.

For a number of years scientists have been endeavoring to devise some method of efficiently preserving and packaging citrus juices. At the research laboratories of the National Dairy Products Corporation in Baltimore, extensive experiments were made under supervision of Dr. E. V. McCollum and Dr. J. H. Shrader before methods were finally decided upon for operation in the Tampa plant.

In handling the fruit for juice extraction, the time element was considered of importance since it has been demonstrated that deterioration of vital elements begins when the oranges are picked. Consequently, as soon as shipments are received from the groves, the oranges are immediately placed in a pre-cooling room where a temperature of from 34 to 40 degrees is maintained; there they remain until ready for peeling and crushing. This is for the purpose of

arresting any loss of aroma or vitamin content.

As the process of extraction begins, the pre-cooled fruit is released from the storage room down a long chute in which it is washed and conveyed past workers who remove all culls, allowing only the choice fruit to pass. After the sorting, the oranges are carried to the citrus sizers where they are separated for the variously-gearred machines.

The peeled fruit is discharged from the chutes into stainless steel boxes and thence through troughs to the presses, made of the same acid-resisting metal. There the oranges are ground and the juice squeezed through a screen at the bottom of the press and into a pipe leading to the filter where the coarse pulp and seeds are discharged. For further refining, the partly clarified juice then passes through a rotary screened filter, after which it is pumped to three 30-gallon tanks preparatory to the initial freezing process.

From these tanks the juice is discharged under 29-inch vacuum into a battery of six vertical direct expansion ice-cream freezers operated under vacuum. The removal of all air completely overcomes the previously-encountered difficulties of oxidation. Remaining in these freezers for three minutes, the juice becomes semi-frozen. By the introduction of nitrogen it is next forced into a large hopper from which the containers are filled. Especially designed paraffined cartons in three sizes, half-pints, pints, and quarts; and gallon and six-gallon cans are used.

The cartons are then capped and machine-sealed and passed on to belt conveyors headed for the "hardening" room where a temperature of 10 degrees below zero is maintained. In this room it requires only a few hours to freeze the juice solid. Crates of the cartons awaiting shipment are then removed to the storage room where the temperature is kept at between 5 and 10 degrees.

Various milk and ice-cream divisions of the National Dairy Products Corporation operating in conjunction with the National Juice Corporation receive this juice in the containers as frozen and will deliver it still in the frozen state along their usual routes. The juice may be placed in the home

refrigerator and kept just as long as milk is kept.

Officials of the company state that the juice as it is now being packaged and marketed, meets every biological test for the preservation of flavor and food properties. The quick freezing process under vacuum, it is said, prevents oxidation and makes it possible to serve to the consumer genuinely fresh juice from tree-ripened oranges, extracted and sealed before any loss of either aroma or vitamin content.

According to E. J. Finneran, Director of Sales and Advertising of National Dairy, economic distribution of the product may be made through the machinery of established milk routes, at a cost to the consumer which otherwise would be impossible.

Mr. Finneran, accompanied by Floyd Stager, who will be in charge of the orange juice distribution, recently visited and inspected the Tampa plant and found it a model of efficiency and sanitary cleanliness. In fact, it had been singled out by the Tampa health authorities for special commendation. A graduate nurse and supervisor are always on duty, enforcing rigid observance of all rules of hygiene and guarding the health of the workmen. W. A. Joslyn, formerly of the University of California, is the bio-chemist in charge, and Warren Weeks is plant manager.

The National Juice Corporation is headed by Thomas H. McInnerney, of New York, as President, and D. Collins Gillett, of Tampa, Vice President and General Manager. The investment in the new undertaking is said to be \$1,000,000.

ORNAMENTAL TREES

- Cypress — Pine (*Callitris*)
- *Golden Shower (*Cassia fistula*)
- Cassia-Bark Tree (*Cinnamomum cassia*)
- Cedar-Red (*Juniperus virginiana*)
- Cajaput or Punk Tree (*Melaleuca leucadendron*)
- Eucalyptus — in variety (robusta, rostrata, rudis, tereticornis)
- Fir, Chinese (*Cunninghamia lanceolata*)
- Holly — American (*Ilex opaca*)
- Italian Cypress (*Cupressus sempervirens*, var. *stricta*)
- Jacaranda ovalifolia

Women Give Active Aid To Citrus

A meeting of women recently held Babson Park under the auspices of Roger Babson, organized what is to be known as the Woman's Citrus Committee, the sole purpose of which is to encourage the use of citrus fruits by emphasizing the nutritious, health-giving qualities of oranges and grapefruit.

Many citrus talks were given by women which aroused much enthusiasm and brought forth round table talks full of suggestions for increasing the consumption of citrus.

An executive committee composed of Mrs. Blanche W. Mallett, Frostproof, chairman; Mrs. J. W. Carson, Babson Park, and Mrs. Douglas Black, Auburndale, was named, and this committee at once became active.

One of the first steps taken by the committee was the issuance of a letter addressed to the president of each Woman's Club in Florida, outlining the purposes of the Woman's Citrus Committee and soliciting the aid of the various Women's Clubs.

The committee is now planning to secure a supply of tire covers bearing the Committee slogan: "Eat Florida Citrus for Health," accompanied by a representation of a bunch of oranges with fruit and foliage in natural colors. These tire covers will be sold at nominal prices by women's clubs. Windshield stickers of similar design will be distributed free by Women's clubs and tourist clubs.

The letter sent out by the Woman's Citrus Committee follows:

"President Womens Club:

"Under separate cover a marked copy of Lake Wales Highlander has been mailed to you, telling you of a citrus meeting and talks given by women at Babson's Business Conference. A committee of three women were appointed at this meeting to serve on the Womens Citrus Committee. This Committee is hoping to get the cooperation and support of every grower in citrus sections of Florida.

"Will you please ask each member of your club to send or direct three letters into other states than Florida, telling them of the health giving qualities of citrus; asking them to purchase citrus fruits as much in

a matter of fact way as they buy milk or meat? Please enclose three citrus recipes with this letter.

"Ask your non-resident growers and tourists to present to their home clubs the movement of this committee in putting this before one hundred and twenty-five Womens Clubs in citrus section of Florida.

"Please appoint a committee to present this movement to the Men's Civic Clubs, Chambers of Commerce, and Tourist Clubs of your city, asking for any suggestion they may have to offer. Ask the President of your Parent Teachers Association to try and have orange juice served in the lunch rooms of the schools, telling them of food values in orange juice. This can be done by purchasing an electric squeezer, having packing houses donate fruit, and by appointing women to prepare it daily and sell it for five cents a glass. This is being done successfully here in the Frostproof School and we feel the

health standard of the children will continue to improve.

"Tell your newspaper men what the women are doing, giving them articles presented at the Conference, asking them to help as I am sure they will do.

"Chemistry of Food and Nutrition," "The Newer Knowledge of Nutrition" probably can be found in your library otherwise at MacMillan Company, New York. "The Chemical Composition of American Food Material"—Bulletin No. 28 can be had for ten cents from Government Printing office, Washington, D. C. Citrus recipe books may be had from Nathan Mayo, Tallahassee, also Citrus Exchange, Tampa.

"Cooperation or telling Americans of the Food Values of Citrus, will be appreciated by our Committee. Adopt our slogan, "Eat Florida Citrus for Health." Print it on your stationery.

"May we hear of the result of your effort and cooperation?"

Prevent Melanose By Keeping Spores From Young Fruit

The time to prevent melanose scars and blemishes on citrus fruits and a likely heavy dropping or later decay is from the time the fruit is set until it is about an inch in diameter, E. F. DeBusk, extension citriculturist, recently explained in an address over WRUF. The methods suggested were the prevention or removal of dead wood, and covering the young fruit with good fungicide.

The melanose spores embed themselves in the dead branches, where they are protected from sprays, and are washed onto the fruit by rains and dew. Fruit that is over one inch in diameter does not seem to be very susceptible to injury.

Under such conditions the most practical control for melanose would be to prevent the occurrence of dead wood. Severe rot pruning due to excessive deep cultivation, under or improper fertilization, over pruning, and other conditions unfavorable to the citrus tree are to be avoided. Preventing the formation of dead wood is far better than removing it

later, though the removal of wood that died during the winter and early spring is one of the control measures. Mr. DeBusk did not wish to discourage pruning and spraying when they are needed, but stated that it is more practical to approach the problem from the other angle and prevent the underlying causes.

It may be necessary to spray the young fruit to protect it from the spores. In such cases spraying with bordeaux-oil made by mixing 3 to 5 quarts of oil emulsion with 100 gallons of 3-3-50 bordeaux mixture, is suggested. The primary aim of this spray should be to completely cover the young fruits, and to do it after they have set and before the spores have been washed onto them. Some prefer to use casein instead of the oil as a spreader, as it is usually necessary to follow with an oil spray in May or June to control scale. Many scale fungi will be preserved if the bordeaux is not sprayed on the trunk and large limbs.

The Citrus Industry

with which is merged The Citrus Leaf
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FLORIDA STATE HORTICULTURAL MEETING

The Forty-Fourth Annual Meeting of the Florida State Horticultural Society will be held at the Columbus Hotel in Miami, April 14 to 17 inclusive, the first time in many years that the Association has met in the metropolis of the Lower East Coast.

The program announced by the committee and which appears elsewhere in this issue, is one of exceptional interest, and particularly to growers and shippers of citrus fruits. Naturally, the citrus topics occupy first place in the program, as citrus occupies first place in Florida horticulture, but other and kindred topics also will be discussed.

In the forty-four years since the organization of the Society in Ocala on April 10, 1888, the Society has stood for progress along all lines of horticultural endeavor and at times has been the saving factor for the citrus industry. Following the "big freeze" which threatened the very life of the industry, and again when the dread threat of citrus canker confronted the Florida growers, the Florida State Horticultural Society and its officers presented a united front in the fight against the common enemy—a fight which was successful and which laid the foundation for the greatest citrus developments the world has known.

In modern days, the efforts of the Society have been along other lines, but have been none the less effective in promoting the welfare of the citrus industry and of Florida horticulture in general. The present officers of the Society have given freely and unstintingly of their time, their energies and their talents to preserve the great institution which the horticultural pioneers of the state so wisely founded and so loyally supported during the trying days of frosts and pests.

The Florida State Horticultural Society deserves the support of all citrus growers through membership, and wherever possible through personal attendance at the Annual Conventions.

The meeting this year is doubly worthy of a large attendance if the preliminary program is to be taken as a criterion of its importance to the industry.

LEGISLATURE CONVENES

Florida citrus growers and shippers are deeply interested in the possible acts of the Florida legislature now in session. Most important to citrus growers will be the action of the legislature on the proposed amendments to the so-called green fruit law.

Just what these amendments may be cannot with accuracy be foretold. A committee representing by far the greater number of citrus growers has formulated recommendations which will be submitted to the legislature with recommendations for passage. Secretary of Agriculture Mayo also has made recommendations for strengthening the present law and bringing it more into harmony with the needs of the industry and the protection of the public from danger of shipment of unfit fruit.

The past season demonstrated the inadequacy of the present law, and there has been general demand on the part of growers, shippers and others interested in the welfare of the industry that the law be strengthened at the present session of the legislature. Doubtless the legislators will act upon this demand and probably will be governed by the recommendations of the growers' committee in formulating the amendments.

But, whatever the legislature may do, there remains the important matter of what the grower and the shipper must do to make any restrictive legislation effective. Without the cooperation of the growers and shippers, any legislation must prove more or less abortive. With such legislation and a full realization that every box of unfit fruit sent to the market detracts from the value of every box of really ripe fruit sold in competition with it, we may hope for relief from the unbearable conditions which have prevailed in former years—but without such realization and the hearty cooperation of growers and shippers, we will be right where we were last season and the season before. In the final analysis the grower has the solution of the green fruit problem in his own hands.

Now growers are told that they may look for better prices on grapefruit for the remainder of the season. The growers are hoping this is one prophecy which may come true.

In our efforts to reduce the cost of production, let's not sacrifice the main point—the production of BETTER fruit—for that is where the profit lies.

Better fruit cannot be produced on trees which are starved or those which have to expend their energy in fighting pests and bugs.

H. Harold Hume is back in state agricultural work as assistant director in research at the Experiment Station.

Research Work Is Necessary To Establish Superiority of Florida Fruits Says Dr. Northen

Because Florida fruits and vegetables are richer in "vital factors," less of these products are required to support the human body, and one can live longer and more economically on Florida products than upon fruits and vegetables grown elsewhere, according to Dr. Charles Northen who for a number of years has been conducting tests upon the mineral content and food values of Florida produce.

Where a person would require half a pint of California orange juice per day, not more than half that much of Florida juice would be sufficient, cutting the expense by half. Florida fruits and vegetables are said by Dr. Northen to be richer both in vitamins and mineral content, the two prime factors in food value. He advocates a system of marketing research, properly set up and conducted, to ascertain the advantages of Florida-grown products and to advertise their superiority to the world.

Dr. Northen summarizes the results of his discoveries concerning food values of Florida fruits and vegetables in the following statement and sets forth his recommendations for the people of Florida and the state continuing along the line already started.

Importance of Marketing Research for Florida

At a time when the whole world is faced by the problem of so-called over production of agricultural products, and the financial and marketing authorities are advising restricted production, it behooves those sections which are especially favored by nature to do everything reasonable and practicable to remove their agricultural products from the range of competition with average quality products from other and less favored sections.

It is conceded that Florida has unusual and superior climatic advantages. Also, that these advantages combine to make life of all kinds

more abundant, more productive and more perfect. All living things—plant animal and human—thrive under these ideal advantages and the food products, as a result of these advantages, are more nearly perfect than those of the same kind produced in less favored sections of the country. Scientific research has furnished the proof to establish these facts.

With this light on our natural endowment we should not be willing to stop short of the goal of making our agricultural advantages profitable by creating for them the kind of research that will furnish the facts with which to bring the consuming world to our door for the best and most economical foods to be obtained.

When the facts as to the food value of Florida products are properly proven and made known to the intelligent consumers there will be established a permanent preference for these foods.

Our vegetables and fruits are richer in many elements classed as "vital factors" than foods grown elsewhere and for that reason the human body can live maximally on a smaller amount of Florida citrus fruits and vegetables than it can on those foods from areas lacking such advantages.

Florida citrus fruits are known to contain more juice. Now let us produce the authentic facts to prove that this fruit contains more mineral elements and more vitamins than any other citrus. Our great medical and dental authorities have determined that it takes one-half a pint per day of citrus juice to protect the gums from disease and the teeth from decay and there should be fixed in the consumer's mind that Florida's citrus juices have more of these protective elements than juices from less favored sections.

Once this fact is shown by expert authority the specialists of the country will advise the use of these more economical products and they will have a marketing preference. It

will quickly be borne to the mind of the consumer that it takes less money to feed a family when heed is given to quality in food. This economical idea will become fixed and the housewife will realize that her dollar invested in Florida-grown food products will purchase more real food than if invested in ordinary products. Therefore, she will demand these foods and the grocer will be quick to see that it is to his interest to meet the demand. In this way permanent marketing values will be established and Florida will no longer be compelled to compete with the world. She will enjoy a God-given monopoly.

If one but casually follows the trend of food research and reads the newspapers it will be easy to see how the mineral elements in foods are coming to be regarded as of primary importance. Recently the Tampa Tribune commented editorially on a report by the department of agriculture as to the food value of avocados. Special stress was laid on the minerals and vitamins contained in this fruit. In the same issue of this paper was published a statement by Scott E. Ennis, president of the Pacific Fruit Exchange, on the rapidly developing citrus juice industry in Florida. He says that the juice developed is the result of the trend of the times. "The trend of the times," opens to Florida the greatest opportunity for solving the marketing problems. This is the era in which the mineral elements in foods are becoming the central thought in the mind of the public just as vitamins have been for the last twenty years. If it is possible to say that one necessity is more important than another we are well justified in saying that by comparison the mineral elements in foods are more important than vitamins. This is because vitamins are formed in plant and tree products only when the minerals are present. Vitamins are useless in the

(Continued on Page 24)

IMPRESSIONS

By The Impressionist

And it develops that Franklin M. Reck, concerning whose Florida booster story we made mention last month is a nephew of W. M. Reck, the well known Avon Park grower and department head of the Exchange, but has never lived in Florida.

Among the Committee of Fifty and in those grower circles which show active interest in the Clearing House there is much discussion just now as to whether or not the Operating Committee shall be shorn of its powers, and the general manager of the Clearing House report directly to the board of directors.

By the bye, wonder how many know that the original Committee of Fifty had its being now some thirty-five years ago; and was the foundation upon which the later prohibition movement in the United States was built.

The recent revelation by the Interstate Commerce Committee of the House in its report to Congress that Pennsylvania Company, one of the holding companies of the Pennsylvania Railroad, had in 1927 guaranteed a loan of one million dollars by certain financial institutions to the Federated Fruit and Vegetable Growers has stirred so much interest in produce circles. Inability of the press to secure more details from officials of the Federated, from Arthur R. Rule former head of that organization, or from Pennsylvania Railroad officials has added mystery to the revelation, when coupled with the very recent financial difficulties of the Federated. This seeming alliance between a transportation and a shipping interest has roused a query in the minds of the produce trade; and apparently the incident is not a closed one.

The refusal of J. A. Griffin to be a candidate for reelection to the directorate of the Clearing House is based upon the excellent grounds that his own business, the Exchange National Bank at Tampa, requires his full attention. Nevertheless his absence

from the board will be a loss to the industry. Not many outside appreciate how large a contribution to the successful existence of the Clearing House Mr. Griffin has made during the past two years.

C. W. Lyons of Tampa in declining to become a candidate was wise, perhaps. The presence of a fertilizer man upon the board, even though he also be a grower, might be misunderstood in some quarters. Joe, as C. W. is more intimately known, would have made a valuable man on the board, however. His genius for pouring oil upon the waters at times when they are troubled, probably would have made him the most popular individual upon the board quite shortly.

Membership upon either the board or the operating committee of the Clearing House entails more than just honor. There is a lot of hard work falls upon the men who compose these boards, and the large amount of time consumed in meetings, and in traveling to and from meetings, lays a heavy toll upon the members.

Associated Press dispatch says very notable feature of the recent gathering of the American Farm Bureau Federation was the absence of complaints against conditions, and talk of relief movements. Maybe there is a lesson in that for us in Florida. Advertising bad conditions within an industry to the outside world seldom accomplishes anything more than to make those conditions worse, if possible.

Meantime, things really are perking up in citrus-Florida. A lot better feeling to be noted in many quarters; and plenty of indications of greater confidence.

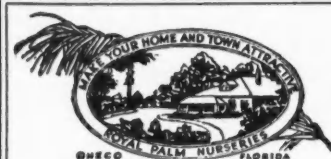
A Japanese resident of London, noting an empty pedestal in Trafalgar Square, recently wrote the London Times suggesting it be filled with a statue to the man who introduced oranges to British consumers. One

difficulty in the way of following the suggestion seems to be that no one has any idea of whom that man may have been.

And the Legislature will be hard at it by the time these lines appear in print. What it may or may not do in connection with a new "green fruit" law is unguessable; but it seems likely the recommendations of the so-called Composite Committee will receive full consideration; probably will prevail.

What it may or may not do in the matter of taxation is equally unguessable; and more than likely will more vitally affect the prospective prosperity of the entire state than anything else it may consider.

A lot of good old hard-heads in the State Senate. They may be able to stem the tide of well meaning, but expensive, projects which will be put forward from many sources, all of which will have the active backing of a certain number of citizens who forget there are apt to be others with other projects. The question is whether the percentage of hard-heads is sufficient; also whether or not they are hard enough to withstand the wear and tear to which they will be subjected.



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BLUE GOOSE NEWS

Monthly News of American Fruit Growers Inc.



Edited by The Growers Service Department

VOLUME 5—NO.5

ORLANDO, FLORIDA, APRIL 1931

PAGE 1

BIG APPLE CO-OP RENEWS AFG CONTRACT

Produce News, New York.

Wenatchee, March 13.—Announcement has been made of the signing of a contract between the Skookum Packers Ass'n, the largest apple co-operative association in the world, and the Northwestern Fruit Exchange sales agents for the marketing of Skookum apples for a period of five years. This will mark the 18th consecutive year in which Skookum apples have been sold in the markets of the world by the Northwestern.

The Skookum Packers Ass'n was organized in 1913, the Northwestern Fruit Exchange having been organized two years prior to that. The Northwestern is affiliated with the American Fruit Growers, Inc., of Pittsburgh.

Commenting upon current conditions recently, Mr. Crutchfield said: "Times of adversity generally result beneficially to those districts and industries which are strong and which occupy a position of leadership because specialists only can measure up to the exacting requirements of such times, whereas the rank and file of their competitors fall by the wayside. This is rather a cruel process, but apparently inevitable. I believe that the Wenatchee-North Central districts are just coming into their own, taking the long-time viewpoint."

The contract just concluded, according to Harry L. Miller, manager of the Skookum Packers Ass'n since 1922 and connected with the organization since 1919, is similar to former ones. It was executed by Harry J. Kerr, recently re-elected president of the Skookum Packers Ass'n. and Myron S. Foster, president of the Northwestern.

For several years the outstanding success of Skookum advertising has been attributed to the careful merchandising work done in connection with it.

"We feel that the success that has attended the growth of this associa-

MORE CO-OPERATIVES NOW USE AFG SALES SERVICE

The Packer, New York.

Pueblo, Colo., March 27.—Co-operative fruit and vegetable growers' association in this state, that have heretofore marketed their crops through other connections are actively lining up for this year's and future shipping.

Already the American Fruit Growers, Inc., and the following associations have entered into exclusive marketing contracts; the United Fruit Growers Association, Palisades; Union Fruit Company, Paonia; and the Growers Arading Co., of Hotchkiss. It has heretofore been estimated that these three associations control a tonnage of from 1,200 to 1,500 cars of fruit, depending upon the season.

Robert Fender of Grand Junction Colo., has recently become affiliated with the American Fruit Growers Inc., as sales manager on Colorado fruit.

He has many friends and is held in high esteem.

The American Fruit Growers, Inc., has also contracted for the exclusive selling of the crops of the Co-operative Fruit Growers & Union Company at Palisades and, in addition to the above, selling contracts have been renewed with the Del Norte Vegetable Growers Association, the Colorado Co-operative Lettuce Growers Association and a number of individual growers of large acreages of cauliflower and onions. This gives a tonnage of approximately 1,200 care of peaches, 300 cars of apples and 900 cars of vegetables.

tion," says Harry Miller, "has largely been made possible because the Northwestern Fruit Exchange has constantly met the responsibility of increased tonnage with ever widening outlets throughout the world."

MARKET SITUATION IN STEADY IMPROVEMENT

The optimism earlier expressed in these columns concerning marketing prospects for Florida Valencias and for Marsh Seedless grapefruit has found justification in more recent developments. The present shipping season, which involves the marketing of by far the largest crop in Florida's citrus history, draws toward its final stages with conditions relatively very satisfactory to the growers, particularly so when proper consideration is given to the general business condition of the country as a whole, which factor has played a most important part in marketing operations.

There is some divergence of opinion in the various estimates of the amount of Florida oranges and grapefruit remaining to be moved. The best estimates of the AFG organization in Florida are somewhat below those put forward by others; but even if the largest of these estimates prove to be correct, there is ample time now to market in an orderly fashion all of Florida's remaining citrus supply, and in such manner as to practically assure satisfactory returns to the growers.

An even and orderly movement of the remaining grapefruit and Valencias in Florida should result in supplies to the markets at an average of about one-half the weekly volume of the proceeding two months, which amply justifies the statement of an excellent outlook.

The Chicago teamsters' strike which briefly threatened distribution in that section, was settled speedily and satisfactorily; and with this settlement disappeared the one threat of possible disruption of regular market movement.

Navel shipments from California, as might have been expected, have been stepped up quite considerably; and must continue in good volume if the remaining navel supply is to be gotten out of the way of the prospective California Valencia move-

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Adv.

BLUE GOOSE NEWS

OFFICIAL publication of the American Fruit Growers Inc., Growers Service Department, published the first of each month in the interest of the citrus growers of the state of Florida.

EDITORIAL ROOMS
Sixth Floor, State Bank Bldg.
ORLANDO, FLORIDA



MECHANICAL REFRIGERATION TRIED ON AFG SHIPMENTS

Trial of mechanical refrigeration, in lieu of the use of ordinary refrigerator cars employing ice, is now in process in perishable circles; and recently has been extended to Florida citrus and to Florida celery by the American Fruit Growers, Inc.

Especially constructed, insulated, railroad cars, owned by the North American Dispatch Line were used. These cars employ the now well known principles of mechanical refrigeration, operated by electric power generated from the car axles when car is in motion. Provision is made for connecting with any nearby electric power line, and thus maintaining refrigeration at such times as car may be stationary for considerable periods in yards or at loading platforms.

Temperatures within the cars may be maintained at any desired point down to fifteen degrees above zero Fahrenheit; and are kept at the desired level by means of thermostatic control.

Recently car N. A. D. X. 4062 was loaded at the packing house of Volusia Growers Inc., at De Land, with oranges consigned to the American Fruit Growers, Inc., New York. Upon arrival of the car in New York it was subjected to careful inspection by E. J. Peters of the standardization department of the American Fruit Growers, Inc., in cooperation with representatives of the car com-

Adv.

pany and of the Fruit Growers Express. He reported "condition of the fruit very firm and healthy in appearance and without any signs of age or weakness." Temperatures inside the car as then taken showed a maximum variation of seven degrees between different locations; temperatures of the fruit in various locations showed a maximum variation of nine degrees.

Later a carload of celery was loaded by The American Fruit Growers, Inc., at Sanford destined to Chicago, the contents arriving that point in very satisfactory condition.

The employment of mechanical refrigeration in this manner is as yet in the experimental stage; and will be watched with much interest.

MARKET SITUATION IN STEADY IMPROVEMENT

(Continued from Page 1)

ment, to begin possibly around the middle of May.

Florida Valencias, however, have the call of the markets, as is well exhibited by comparative prices being paid in the auction markets; and there is every promise of a steady trend of prices, with appreciable increases coming as the diminishing supply becomes more apparent.

Marsh Seedless now has a nearly clear road; and prices from now on will depend upon the visible supplies on track and sizes and quality of the offerings, though somewhat impaired buying power, together with supplies beginning to arrive from Porto Rico, may put a brake upon any later tendency toward extreme prices.

To cap the situation, Texas has lifted her embargo upon Florida citrus fruits, insofar as affects Florida's established markets; and the discontinuation of fruit fly inspections here in Florida is apparently the last needed act to indicate that federal authorities now are convinced Florida is free from the fly menace; and ready to resume fully her accustomed place in the citrus world.

DECISION OF LARGE IMPORT TO FLORIDA

The recent victory of the Growers and Shippers League of Florida, when the Interstate Commerce Commission denied to the carriers the privilege of making a separate charge for the use of refrigerator cars

when furnished without ice to Florida fruit and vegetable shippers, is of considerably greater significance to Florida than is generally appreciated, according to J. R. Crenshaw, Orlando, traffic manager of the American Fruit Growers Inc.

The carriers were in this case ordered to rescind a new tariff rule imposing a charge of from \$5 to \$15 for the use of refrigerator cars without ice when furnished for loading at shippers request. At the estimated average charge of \$11.50 per car under this rule the cost per season to the fruit and vegetable growers of Florida, according to the League, would have approximately eighty thousand dollars.

Most important, however, according to Mr. Crenshaw, was The Interstate Commerce Commission's determination of the fact that the line-haul, or ordinary, freight rates had been figured to include all costs to the carriers of furnishing refrigerator cars for the Florida fruit and vegetable movement. It was upon this basis that the Commission held the added charges unreasonable and unjustified.

The Commission's decision thus settles in favor of Florida growers and shippers a point which has long been in dispute. Florida traffic men were firmly of the opinion that the line-haul rates should, and did, include the cost to the carriers for the use of refrigerator cars and all other special items of cost involved in their handling of Florida perishables. This carriers representatives have denied upon occasion; and from time to time Florida has had to oppose efforts to levy special charges for special services, the effect of which would be to add to the cost of getting these products to market.

BRITISH FRUIT MEN PAY FLORIDA VIST

Among the very interesting visitors at the Orlando headquarters of the American Fruit Growers, Inc., recently were Messrs. S. B. Cornish, J. R. Colyer, and George J. Webb, foremost British fruit importers, and distributors of Blue Goose grapefruit in the British Isles.

Mr. Webb, of McCaig & Webb, Glasgow; Mr. Colyer, of J. Colyer & Co., Ltd., Aldershot, Bristol, Reading and Swindon; and Mr. Cornish, of Pask, Cornish & Smart, London, all are associated in the Fruit and Pro-



duce Exchange of Great Britain Ltd. Membership in this organization comprises ten leading produce firms of Great Britain, and through the parent houses and their branches covers completely distribution centers in the Isles, operating directly in sixteen cities.

It is through the instrumentality of these associated distributors that Blue Goose grapefruit has become almost as well known to the British consuming public as it is to American consumers.

In addition to a visit in Orlando, these gentlemen as guests of R. B. Woolfolk and C. N. Williams went upon an extended tour of citrus Florida, visiting the packing plants affiliated with the American Fruit Growers, Inc. Their tour also included a trip across the Everglades, in which they were much interested.

Consumption of grapefruit in the United Kingdom, according to Mr. Colyer, has trebled within the last three years. In ten years it has grown from practically nothing to 450,000 boxes a year. While grape-

fruit comes to the British markets from Florida, California, Porto Rico and South Africa, it is Florida grown grapefruit which has won the preponderance in the markets during the season when supplies from Florida are available.

H. L. Huber, manager of the New York branch of the American Fruit Growers, Inc., accompanied the Britishers on their visit to Orlando and their tour of Florida.

BLUE GOOSE SCOTCHMAN GIVEN SIGNAL HONOR

William E. McCaig, of Messrs. McCaig & Webb, Glasgow, importers of Blue Goose fruits, recently received signal honor in his appointment as representative on the Clyde Navigation Trust.

The Clyde Navigation Trust is a body similar to the Port of London Authority, and the appointment is not only a distinct honor to the appointee but to the fruit trade, of which he has long been one of the very prominent men in the United

Kingdom. Considerable satisfaction over the appointment has been expressed among the members of the Wholesale Fruit and Vegetable Trade Associations, of which organization Mr. McCaig is vice-president.

CITRUS FRUIT ACREAGE OF UNITED STATES IS 691,663

The total citrus fruit acreage of the U. S. is 691,663 acres, according to the estimate prepared April 1, 1930, by Robert W. Hodgson, professor of citriculture, university of California. Of this total California is credited with 276,292 acres, or 40% of the total acres, yet she accounts for 63.7% of the total production. 63.7 per cent of the total production, Florida with 314,665 acres, or 45 per cent of the total acres produces only 33.9 percent of the citrus fruit produced in the United State. Less than 10 per cent of California's acreage is non-bearing while close to 40 per cent of Florida's acreage has yet to come to bearing.

Superior Service

The American Fruit Growers, Inc., is one of the largest concerns in the world representing growers for the sale of their products in the markets.

It has reached that point solely through proving its ability to render superior service to individual growers.



American Fruit Growers Inc.

Florida Division

Orlando, Florida

CITRUS COMMENTS

—BY—

Charles D. Kime, Orlando, Florida

This department is devoted to furthering horticultural interests of Florida. Letters of inquiry, discussion or criticism will be welcomed.

"1930 a Year of Nitrogen History"

The year 1930 came to a finish with the first heavy production of nitrogen in history. It is a more important year to us because of that reason than we realize just now. We have had too many marketing troubles to plague us. We have had personal financial difficulties, many of them the fault of gross mismanagement of someone else. Our personal deflation would have been flatter (if that was possible) in the absence of this heavy nitrogen production. In fact we can put the matter even stronger and risk a statement that "nitrogen at lower per unit cost has saved our skins."

Two million four hundred thousand and metric tons represented the world's manufacturing capacity for 1930. This figure is not in terms of ammonia or combined nitrogen such as nitrate of soda or sulphate of ammonia or NH_3 but it the figure derived by converting all of the manufactured combined nitrogen sources into terms of pure nitrogen. And we need not forget that this figure is also exclusive of Chilean nitrate of soda, a natural mined product.

Within the United States "The Fertilizer Review" gives us credit for a capacity exceeding 350,000 tons of manufactured and by-product nitrogen sources. This the Review further states is an increase within a five year period from 162,000 tons. In this country sulphate of ammonia (a highly satisfactory source of nitrogen) has been the main product. Sulphate of ammonia is a by-product of various smelting operations.

The manufacturers of synthetic and by-products nitrogen carrying materials have not all had easy sledding and neither have they grown rich. The World slump has caused some failures within the industry and has caused curtailment in production. In the end the whole setup will mean a "lower per unit nitrogen cost". This is what we need and it is to be devoutly hoped a continued reduction in prices per unit will be possible.

Nitrogen Carriers Being Investigated

From time to time results of nitrogen source tests are seen in the press of other States. Source tests have recently appeared from Pennsylvania Experiment Station covering trials to date of a good number of nitrogen carriers. These are differences that the farmers of that section find well worth noting. The citrus growers of Florida should certainly see that our own Experiment station is placed in a position where they can undertake a complete survey of nitrogen sources for citrus. This information is vital to the industry.

Other Cover Crops

Sesbania has reached Texas from California. It is a legume and has been grown for years in the Imperial Valley. It is being tried in Florida and might possibly prove of value to us later on. Just now we are busy with crotonaria.

Phosphates Again

The use of phosphate in citrus work will not be settled for a long time. We are fortunate to have methods available now that will give us some data on which a fairer evaluation of its effects may be based. In the meantime evidences of its value in repeated fresh applications continue to accumulate. Some of us are certainly fooling ourselves badly one way or the other.

On What Do the Nitrogen Gathering Bacteria Feed?

Ordinarily we would expect that nitrogen gathering Bacteria would add plant food to the soil. It seems probable in this State at least that with normal summer weather this is the case, but it is interesting to note that this may not always happen. At the Rothamstead Experiment Station it has been noted that in the absence of the necessary food materials for the bacterie other than air nitrogen, the bacteria will actually attack their host plant itself and cause some damage. In the presence of minute quantities of boron this does not seem to occur.

Apples Similar to Citrus
In "American Hortigraphs" W. A.

Ruth of the University of Illinois, developed the fact while studying rooting habits of apple trees that a large proportion of the feeding roots of bearing trees were close to the surface.

A fifteen year old Johnathan tree had about one-half of the finer roots within three inches of the surface and about two-thirds within six inches. A surprising fact that is also true of citrus was also developed when of the fine roots within six inches of the surface over three-fourths were found in the soil under the branches of the tree.

Evidently citrus practise of shallow cultivation also would apply to apples. Professor Ruth concludes that when cultivation is part of the orchard practise it should always be shallow. We go further with citrus and not only cultivate very shallow, if at all, but also fertilize under the trees.

Moisture Conservation Aided by Mulching

The results of mulching in attempts to conserve soil moisture have proven so outstanding in some work done by H. C. Esper of the Ohio Experiment Station that we are giving herewith some of his work.

"The record drought of 1930 has

SPRING SPRAYING

Apply VOLCK or KLEENUP (the proven Oil Sprays) combined with Bordeaux for Melanose, Scab, Scale and White Fly . . .

WRITE FOR SPRAY BULLETIN

CALIFORNIA SPRAY-CHEMICAL CO.

61 West Jefferson Street,
ORLANDO, FLORIDA

VOLCK
VOLCK
JUNIOR
KLEENUP



definitely proven the superior values of mulches over cultivation for ornamental plants, according to staff men at the Ohio Experimental station here. Trees and shrubs which had been planted on the campus of Ohio State University during the past spring and to which mulches of various kinds were applied were saved. Laying aside the top layer of mulch even during the latter part of July reveals abundant moisture, although no water has been applied since April.

"Plants not mulched but cultivated often and watered heavily at least four times during the season are gradually losing out. No matter how much water is applied, due to the extreme heat it rapidly evaporates and the plant receives little, if any, benefit. The water table is far below the root system, and the plant naturally dies from lack of moisture.

"Various mulches have been tried by H. C. Esper of the Department of Horticulture of the Experiment Station, and the conclusion has been drawn that nothing holds moisture more effectively than half-rotted leaves which have been piled up the preceding fall, thoroughly soaked before the moisture has left the ground.

"Peat moss is a fair mulch, but usually it is applied so thinly as to be of little benefit. If applied as heavily as it should be, it is an expensive proposition.

"Old strawy manure is of course an excellent mulch, but not available to most people. Buckwheat hulls are being tried, but their efficiency has not yet been determined.

"It is recommended that all newly planted shrubs or trees be heavily mulched as soon as planted, allowing the mulch to remain until it rots away.

Summer Fertilizing

There seem to be more unusual circumstances surrounding grove fertilizing this year of 1931 than ever before. Few growers have followed their usual procedure and many have broken radically with old ideas for the first time. The situation has us all figuring, from grower to consumer.

As never before, the situation in each individual property will have to decide what is best to be done. Unfortunately the personal situation of the grower himself is also a too important factor this year. Some of us cannot afford to fertilize as we should. In the spring prices for fruit were low, production was so heavy no improvement could be looked for. As a result many groves

were not fertilized, others were given a light application, while more were given a straight natural application of some kind of nitrogen.

For the summer application we will have every condition of grove feeding fertilizing that can be imagined. And as if this irregular spring lineup were not enough, cold weather has seriously altered grove conditions until many old groves are in bad shape. They are in much worse shape than the owners realize at present. The condition is two-fold at least. First: Bloom without new spring growth coming at the same time. Second: Continued cold weather has seriously interfered with the ability of the tree to handle plant food materials that

may have been present, the absorption and conversion of which were essential to best development of spring growth and bloom. This last condition (No. 2) is resulting in abnormal shedding of old leaves. It is likely to result in a poor set of fruit as well. The inference in such condition is that the tree did not store reserve plant food materials which it could handle last year, i. e., in summer of 1930, and that it went into the winter in poor condition to withstand continued unfavorable conditions.

The first condition, bloom without growth, is not unusual but on the other hand it does not occur very frequently.

(Continued on page 22)

HELPING THE PROGRESSIVE FARMER KEEP PACE!

A DEMAND for special fertilizers to perform special services in respect to yield and quality of crops followed the introduction of inventions and discoveries of industry which has changed the tempo of the American people.

The progressive farmers felt the need of fertilizers with greater producing power to keep pace with industry.

The International Agricultural Corporation undertook the task of compounding fertilizers that would meet these new conditions. Hence, today the Osceola and International Crop Producing Fertilizers embody new ideas, new discoveries in the value of plant foods, the use of new plant foods and new manufacturing processes. The users are keeping abreast with Progress.

Will you give us the opportunity to tell you how our fertilizers have benefited others?



INTERNATIONAL AGRICULTURAL CORPORATION
MANUFACTURERS OF HIGH GRADE FERTILIZERS

208 St. James Bldg.

Jacksonville, Fla.

Satisfaction at Harvest Time



JACKSONVILLE PLANT. One of the 32 A. A. C. Co. plants. This is one of the most modern and best-equipped fertilizer factories in the country. Observe the convenience of rail and water transportation. The economies of such operation are reflected in better values to the farmer.

68 YEARS OF EXPERIENCE and ONE unchanging policy—SERVICE

MONTH after month in these pages we have published actual experiences of Florida growers, and printed their letters—all proving the superior crop-producing power of "AA QUALITY" Fertilizers. Larger yields, better quality, earlier maturity—*bigger profits*: these are the reports from every part of the State.

Selecting the right fertilizer, however, is only one of the problems in producing profitable truck and citrus crops. Having served the growers of this State for nearly three-quarters of a century, The American Agricultural Chemical Company has acquired a complete and thoroughly-practical knowledge, not only of the kind of fertilizer that produces best results, but how to use fertilizers to obtain bigger crop profits.

Every ton of "AA QUALITY" Fertilizer and every A. A. C. Co. fertilizer recommendation is backed by 68 years' experience with Florida crops and soils.

To make that experience available to the grower, we organized our A. A. C. Field Service. Every A. A. C. Service Man has the benefit of our background and experience. His is not "book l'arnin'" —it is practical, two-fisted experience.

This Field Service is yours for the asking. A word to the nearest "AA QUALITY" Fertilizer Dealer, or a postcard to our Lakeland office will bring a Service Man to your door. Ask him to tell you about AGRICO, the new "AA QUALITY" Fertilizer.

The AMERICAN AGRICULTURAL CHEMICAL CO., Lakeland, Florida

"AA QUALITY" Fertilizers

BRADLEY'S

AGRICO

BOWKER'S

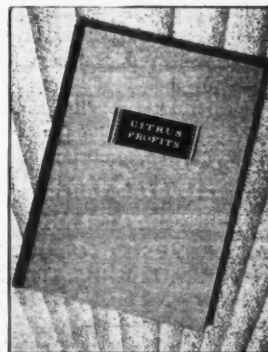


(Above) **PENSACOLA WORKS.** Another of the large A. A. C. Florida plants. You are always welcome at A. A. C. plants, where you may observe the painstaking care employed in making every ton of "AA QUALITY" Fertilizer.



USE A. A. C. FIELD SERVICE

Hundreds of successful Florida growers avail themselves of this practical service every year. Drop us a line and ask our Service Man to call.



"Citrus Profits," the new book on Citrus Culture. The "Florida Grower" says: "Of all books published for Florida growers by concerns which serve them, none equals 'CITRUS PROFITS.'" Apply to your "AA QUALITY" dealer for a free copy.

CITRUS COMMENTS

(Continued from page 20)

quently. Just as soon as the bloom sheds off the tree is in worse condition than before bloom occurred. This condition is serious where the trees are off color and in poor physical condition. To start with, much dead wood is likely to appear before the tree can build up sufficient additional reserve to send out a growth. It is dependent for its activity on old leaves that have had a hard time all winter, or as is actually happening, the old leaves have already shed leaving only a mass of bloom. Such limbs are almost bound to die back as soon as the bloom has shed off for a short time. Anything that will assist in livening up the tree a bit will help the situation. The main thing is, first, warm weather; second, moisture; third, something to eat. Cultivation in spite of its taboo would also help amazingly.

The unusually heavy bloom and the lack of new growth along with it has an important bearing on subsequent fertilizing. Along with this the premature shedding of old leaves is also a matter of concern. Fertilizer applications must be balanced. Up to date in the majority of cases they are unbalanced. Therefore, the summer application should begin the balancing. Just how much phosphorous and potash should be used to do this will be depend on available soil reserves, amounts previously applied in spring of 1931 and fall of 1930 and on the physical condition of the grove right now, also the type of fruit concerned is important as well as the quality of fruit the person applying knows how to produce.

In other words, nobody can say what should be done in any grove without knowing the grove and something of its history, and also considerable about how to grow good fruit as well. The most that we can say is fertilizer must be balanced to the needs of each particular grove that is being fertilized, which means that potash and phosphorous are as essential as the nitrogen. For the sake of quality effects on the fruit and for the sake of tree condition, the balancing must start in the summer application at least.

GRAF LEAVES ENTOMOLOGY BUREAU; JOINS STAFF OF NATIONAL MUSEUM

John E. Graf, assistant chief of the Bureau of Entomology, U. S. Department of Agriculture, has resigned, effective March 5, to become associate director of the National Museum,

according to an announcement by Dr. C. L. Marlatt, chief of the bureau.

Mr. Graf began work for the department 20 years ago immediately upon graduation from Pomona College, California. His first duties were to assist in truck crop insect investigations in the West. In 1923 he was transferred to Washington, and a year later was promoted to the position of chief of the division of truck crop insect investigations. In 1928 he was promoted to assistant chief of the bureau, in charge of business management.

In announcing the resignation of Mr. Graf, Doctor Marlatt said: "Mr. Graf has risen rapidly since he entered the department 20 years ago. His judgement, and common sense in dealing with insect problems, have contributed much to the effectiveness of the bureau's work in this field. Under his supervision development of control measures for such well-known pests as the Mexican bean beetle and the sugar-beet leaf-hopper has progressed."

In addition to his other duties, for the last five years, Mr. Graf has been a member of the advisory Quarantine and Control Administration.

OPTIMISM SHOWN

SERIES EXTENSION

CITRUS MEETINGS

Florida citrus growers and specialists seemed to be quite optimistic about the future of the citrus industry during a series of three well attended extension citrus meetings held at Fort Myers, Arcadia, and Fort Pierce. Each of these meetings was arranged by the county agent, and along with the agent and leading growers the principal speakers were E. F. DeBusk, W. T. Nettles, and Dr. O. C. Bryan, from the College of Agriculture.

The main reasons for optimism seemed to be the progress of coordinated marketing; the lower cost of

production with cover crops, less cultivation, and more scientific management; and the prospects of a large canning and freezing industry. The opinion seemed to be that a large crop of fruit is setting, and growers were anxious to do everything possible to improve its quality.

FOREIGN FRUIT AND

NUT CROP PROSPECTS

The following information on citrus fruit crops was received in the Foreign Agricultural Service of the Bureau of Agricultural Economics.

Spain: The Spanish orange crop is estimated at 20 to 25 per cent under last season's estimated crop of about 42,600,000 boxes (70 pound basis), according to a report from Consul Reid Thompson at Valencia. The crop is well developed and runs to large sizes. Exports will not start as early as last season and probably will not be moving in volume until the last part of November.

Palestine: Exports of Jaffa oranges are expected to be about the same as last season when 2,700,000 boxes were exported, according to the Empire Marketing Board. Last season about 2,000,000 boxes, or 75 per cent of the exports, went to the United Kingdom. First shipments will start moving about the second week in November. Grapefruit exports for the coming season are estimated at about 60,000 boxes, most of which will go to the United Kingdom.

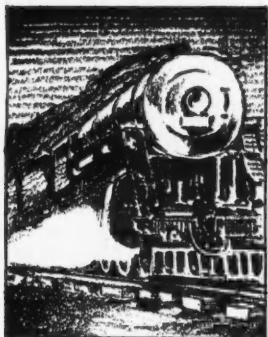
Syria: The production of lemons this year is estimated to be between 400,000 and 500,000 boxes, according to the Empire Marketing Board. Oranges are expected to reach 300,000 boxes.

Italy: The Sicilian lemon crop was damaged by hail the latter part of October, according to a cable from Consul Travers at Palermo. Business in new crop lemons is very dull.

CITRUS NURSERY NEWS

We have for sale 200,000 Orange and Grapefruit trees of staple varieties on sour orange roots. Caliper 1/2 to 3 1/2 inches. Fine stock. Must be sold. Write to us for prices.

Lake Nursery Company
Leesburg, Florida.



40,000 CARLOADS of CITRUS FRUIT



This is the sixth of a series of Armour advertisements discussing phases of the citrus industry:

- 1 Importance of the citrus industry to Florida.
- 2 Nursery stock and young groves.
- 3 Bearing groves and varieties of fruit.
- 4 Harvesting.
- 5 Packing.
- 6 Shipping.
- 7 Marketing.
- 8 Advertising.
- 9 Citrus by-products.
- 10 Salute to the industry.

EVEN the shipping of Florida's citrus crop means an income for the people of Florida.

Freight charges add their tithe to the state's wealth, enriching Floridians and contributing to every business and enterprise within Florida's borders.

Last year it cost \$14,220,000 to ship the citrus crop to market. This figure was based on a total of 40,000 cars, each containing 360 boxes. The approximate shipping cost per box was \$1.

Of this huge total spent for rail transportation, one-fourth or \$3,555,000 was spent for transportation within this state.

This phase of the citrus industry touching on the railroads is another evidence of how deeply the production of citrus has penetrated the fab-

ric of Florida's economic life.

And just as intimately interwoven with the prosperity of the citrus industry is the use of Armour's BIG CROP Fertilizers. These scientifically made, result-proved formulas produce crops that have both quality and quantity . . . quality to ship in first class condition and to bring top prices in market . . . quantity to multiply the profits.

(Statistics obtained from the Florida State Marketing Bureau.)

MAIL THIS COUPON TODAY

ARMOUR FERTILIZER WORKS,
Dept. 146, Jacksonville, Florida.

Please send me, free, a copy of your "CITRUS FERTILIZING IN FLORIDA" booklet.

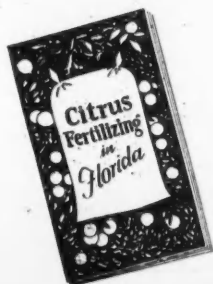
Name

P.O. R.F.D. Route

County State

Dealer's Name

*Free
Booklet*



Armour's

BIG CROP FERTILIZERS

Our Florida warehouses are located at
Winter Garden, Orlando, Homestead, Fort Myers,
Frostproof, Lake Wales, Arcadia and Palmetto

RESEARCH WORK IS NECESSARY TO ESTABLISH SUPERIORITY OF FLORIDA FRUITS SAYS DR. NORTHEN
(Continued from page 13)

human body without the minerals and the minerals are of little value without the vitamins. An abundant supply of both minerals and vitamins are essential to abundant life.

Florida has natural advantages which enable her to produce fruits and vegetables richer in minerals than can be produced in any other section of the country.

These same advantages make it possible to produce fruits and vegetables containing more vitamins than are found in products produced elsewhere. Herein is the natural advantage with which nature has endowed Florida, and all that we need to do is to thoroughly inform the public on this subject by showing the comparative facts.

Then the great welfare and health organizations, sanitaria, and hospitals will readily specify these better foods without reference to price. In order to reach this trade, however, our arguments must be supported by authentic facts. To make these facts authentic they must come from sources of recognized authority. Marketing research properly set up and properly directed can produce these facts acceptably, thereby opening a door to the most dependable and desirable markets.

On coming to Florida six years ago I wrote a paper on processing fruits and vegetables which won first prize of \$1000.00 in the Florida Industrial Contest. In this paper I stressed the value of the above suggested facts in marketing these products. At that time, however, these ideas were regarded as more or less theoretical. Not many agreed as to their importance. Today they are accepted almost universally by scientific authorities. Not only that, but I have been able, within the last four years, to demonstrate with field tests in Florida that the mineral and vitamin content of fruits and vegetables can be greatly increased and at the same time the general quality of the products improved to the extent that they bring higher prices in markets than compelling products produced under ordinary methods.

Texas quarantine off, insofar as the territory into which Florida ships; fly inspection in Florida withdrawn; Florida oranges beating California's by sixty cents per box, or more, in the markets— isn't this something like we used to call getting back.

CULTIVATE CITRUS LESS TO CUT COST OF QUALITY FRUIT

Another big crop of citrus seems likely, due to a heavy bloom, flushing growth, and excellent moisture conditions, and thus it is imperative that growers carefully consider less cultivation and other factors influencing quality and low cost of production, E. F. DeBusk, extension citriculturist recently explained in an address from WRUF.

Growers who are spending their portion of Florida's \$6,000,000 annual cultivation bill should study some of the groves over the state where cultivation is being cut 30 to 75 percent with a marked improvement in fruit quality and tree condition. In this connection, during the past three seasons a study of why fruits grade low has been made in a number of packing houses, with the conclusion that coarse texture ranks near the top. DeBusk stated that improper cultivation was likely responsible for more coarse texture than all the other factors combined. He explained that cover crops along with little or no cultivation had practically lifted the Temple orange on rough lemon stock from the discard, due to

its coarse texture and drying out, to a place among our best sellers and most profitable varieties.

Certain well known citrus diseases are often traceable to excessive or improper cultivation. Pruning the roots from a balanced tree usually results in a dying back of small branches, and paves the way for melanose. Ammoniation is usually associated with excessive cultivation.

Maintaining a supply of organic matter is a dominant soil fertility problem with the citrus grower. In hot weather and on sandy soil this already excessive organic decomposition is only accelerated by stirring the soil. The importance of this organic matter can be clearly seen if one will study the conditions under which the best fruit in the state is being grown.

The one benefit from grove cultivation is that of keeping down vegetation that will compete with the tree for moisture. Cultivation to this end in bearing groves is often overdone, since a slightly shaded soil during the early summer, just before the rainy season, will evaporate less moisture and will more evenly absorb rainfall. Growing a cover crop, or at least keeping the vegetation mowed down, should be given more consideration.



Our Research Department will gladly help you solve your soil problems

QUALITY'S THE THING

You can't get satisfactory prices for UNSatisfactory fruit. **QUALITY** fruit brings quality prices and an increasing demand for your **QUANTITY** output. **A. & G. FERTILIZERS** keep your citrus trees healthy and growing like sturdy children. No fillers—**A. & G.** is **ALL** fertilizer. An **A. & G.** Brand for every soil need.

AMMO-PO

THE top dressing for spring application, being 18% Ammonia, 14% Potash. Conveniently prepared for one-man distribution—packed in waterproof bags—finely ground for easy application. Free of Borax and Chlorine.

ATLANTIC & GULF FERTILIZER CO.

C. NASH REID, President
Jacksonville - - - Florida

Write for Free Price List No. 64



PREVENTION OF SOIL EROSION IS PROGRESSING IN SOUTHEAST

The campaign against soil erosion in the Southeastern States is making satisfactory progress, says Dr. A. G. McCall, of the U. S. Department of Agriculture, who has just returned from a tour of inspection of soil fertility, soil survey, and erosion work in the South Atlantic States.

Doctor McCall, who is Chief of the Soil Investigations Unit of the Bureau of Chemistry and Soils, reports that terracing is well under way and that experimental plots and tanks for the measurement of sheet erosion are being built at the bureau's new erosion-prevention station at Statesville, N. C. "Farmers and agricultural leaders of North Carolina are showing much interest in the new erosion station. An advisory committee from the State College of Agriculture at Raleigh is assisting with the work," said Doctor McCall. He reports that the Association of Southern Agricultural Workers are planning a field meeting at Statesville for next summer when the practical measures of erosion prevention adopted at the new station will be inspected by farmers and agricultural workers from all parts of the South.

In Georgia Doctor McCall inspected the experiments with fertilizers for pecans. In these experiments the bureau is cooperating with the Bureau of Plant Industry and the Bureau of Entomology.

Doctor McCall inspected the bureau's citrus work in the Orlando and Indian River orange groves, and reports striking results from the use of small amounts of manganese in increasing yields and improving the quality of the fruit on many of the Florida soils.

"The remarkable effect of manganese in stimulating the growth of truck crops on glade soils, where ordinary fertilizers alone have proved unprofitable, is leading increasing numbers of farmers to apply manganese," says Doctor McCall commenting on the bureau's experimental work at South Miami and at several points on the west coast of Florida. Following up the success of its experiments with manganese the bureau is also investigating the fertilizing qualities of other little-known fertilizing elements such as copper and zinc, says Doctor McCall.

WANTED—Second hand tractor, preferably with rubber tires. Box H., Lake Alfred.

FROZEN TANGERINE JUICE FOUND TO BE PLEASING PRODUCT

Investigators at the Florida Experiment Station have found that it is possible to freeze tangerine juice by relatively simple methods and without any special precautions. The resulting product is very satisfactory, with a flavor that is pleasing

and appealing. Frozen tangerine juice has been kept in the Station's cold storage plant for over four months. Just how long the juice will keep remains to be determined.

Tangerine juice has blended with orange juice, and has given a richer and deeper color and more sprightly flavor to the orange juice. Blends with the juice of grapefruit, tangelos, etc., are being studied.



You Can Depend On EMULSO

Either in the old familiar liquid form or the newer concentrated jelly (Emulso Concentrate) Emulso can be relied upon to effectively and safely clean up scale and white fly.

No extravagant claims were ever made for Emulso. All recommendations are conservative and based on average conditions. Under certain conditions, Emulso will do much more than is claimed for it, but your pest control program should not be based on unusual results one or two times. It takes several seasons to prove the true value of any insecticide, especially oil sprays.

NIAGARA SPRAYER & CHEMICAL CO. INC.,

Jacksonville, Florida.

It's the • EXTRA BOXES • that make the PROFIT

EXTRA BOXES per tree...that's what you need to make fruit that pays you to market this year. And the way to make sure of getting these extra boxes is to feed your trees the Chilean Nitrate of Soda they need...when they need it.

A good application of Chilean now does two things (1) provides needed nitrogen for the second flush of growth; (2) helps the young fruit to develop into big, juicy, flavorful maturity.

Chilean....the Natural Nitrate

Long time nitrogen tests at Lake Alfred Experiment Station prove Chilean to be the efficiency nitrate for citrus fruits. Why? Science has found that one big reason is the natural origin of Chilean. Nature gave it certain "impurities," Iodine, Boron, Magnesium, Potassium, Calcium. Each is a valuable plant food in itself, making Chilean really a super-nitrate...because it is Nitrogen PLUS.

Now Chilean comes in new 100 lb. bags for your greater convenience, and sells at a low price for your greater economy. Two kinds—Original (Crystals) and Champion Brand (the pellet nitrate). Both are genuine Chilean. Say "Chilean" when you order and be sure Chilean is delivered to you...for the good of your trees.

Chilean
Nitrate of Soda
EDUCATIONAL BUREAU



Orlando Bank & Trust Bldg., Orlando, Florida

In writing for literature or information, please mention Ad No. I-25

TO INCREASE RESEARCH AND SERVICE WORK IN AGRICULTURAL ECONOMICS

Expansion of several lines of agricultural economic research and service by the Bureau of Agricultural Economics, U. S. Department of Agriculture, was authorized by the Seventy-First Congress in appropriations which will become available July 1, this year.

The appropriations provide for expansion of economic research in farm taxation and farm mortgage finance, and for the study of trends of prices, production and consumption in the marketing and distribution of farm products. Service activities dealing with market inspection of farm products, and with the collection and dissemination of agricultural market news are to be increased.

Congress has authorized the bureau to enlarge the inspection of fruits and vegetables, to increase the grading service on poultry, beans, and meats, and to establish a market inspection service on canned fruits and vegetables.

The bureau has been authorized to expand its market news service on livestock and meats west of the Continental Divide, to establish a livestock market news service at Louisville, Kentucky, to extend the livestock leased wire market news service to Ogden, Utah, and to inaugurate livestock market news service at Casper, Wyoming.

Congress has authorized the expansion of the bureau's market news service on fruits and vegetables in important producing sections, and the establishment of market news service on citrus fruit in the Rio Grande Valley of Texas. Provision has been made for additional statistical work in connection with market news on dairy and poultry products, and also in connection with market news on hay, feed, and seed. Inauguration of a market news service on tobacco was also provided for by the last Congress.

Other additions to the bureau's activities will include the employment of additional supervisors in the Middle West in connection with administration of the Grain Standards Act, and expansion of the bureau's staff of inspectors to meet increased demands for the inspection and licensing of warehouses under the U. S. Warehouse Act.

COLORING FRUITS

AND VEGETABLES

(Continued from page 7.)

without any openings the same as required for a burner house constructed as a part of or in the packing building.

The detached burner house should be a building used for no other purpose and should be no larger than necessary. The door to the burner house should be on the side away from the packing house building.

The duct through which the gas from the kerosene burners is delivered to the coloring rooms shall be provided with an automatic damper so arranged that it will close automatically to prevent fire passing through the duct. One easy way of accomplishing this is by running the duct up through the roof of the burner house and cutting in it a V-shaped notch which extends almost through the pipe. A sheet iron damper may then be hinged at the back of the pipe and so arranged that when dropped it closes the intake pipe to the coloring room and opens the pipe to the roof, to allow the smoke to escape, and when raised opens the intake pipe and closes the pipe through the roof. This damper should be arranged to operate by the fusing of a 165° F. fusible link placed over the duct opening or by some other means acceptable to the Inspection Department having jurisdiction. Any other arrangement of damper which will cause it to close automatically to prevent fire passing through the duct will be satisfactory.

When the kerosene supply tank feeding the burners has a capacity of more than 1 gallon and the burners are located within 50 feet of the packing house or other building, there shall be an automatic valve in the feed line from the tank to the burners which will shut off supply of kerosene in case of fire. Such device should be arranged to operate by the fusing of a 165° F. fusible link or other means acceptable to the Inspection Department having jurisdiction.

Kerosene tanks of greater than 1 gallon capacity shall not be located in the same room with the burners but should be located outside or in another room of the burner house, and there shall be a shut-off valve in the kerosene line close to the tank.

Kerosene tanks of greater than 10 gallons capacity shall be provided with a permanently open vent pipe of not less than ½-inch inside diameter. Vent pipe should extend above the roof of the burner house or be otherwise suitably located. The

vent is necessary so that the tank will not burst when heated by fire from any cause.

Coloring with Ethylene

Ethylene cylinders, which must always conform to Interstate Commerce Commission Specifications, when stored in the packing house must be recognized as an added fire hazard, and unnecessary quantities of ethylene should not be stored in the building. If more than one cylinder above what is in actual use is kept on hand the extra ones shall be kept in a dry, well ventilated location outside the building. They may be kept on the platform immediately outside the building or may be kept in a special detached building.

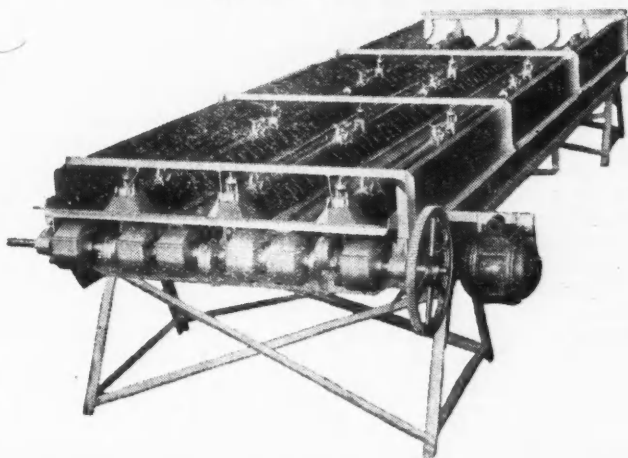
It should be borne in mind that

ethylene and air in certain proportions form an explosive mixture, presenting a hazard similar to that of mixtures of illuminating gas and air. However, the quantity of ethylene necessary for satisfactory coloring is never greater than 1 part of ethylene to 1,000 parts of air, and a concentration of at least 30 times this amount is necessary before ethylene will burn or explode with air. With a reliable and properly safeguarded method of introducing the ethylene, there should never be a sufficient quantity of ethylene in the coloring room or enclosure to form a mixture which will burn or explode.

Any quantity of ethylene in excess of 1 part to 1,000 parts of air will not hasten or improve the coloring

Early Buyers Save

Take advantage of
early order discounts



Order now the equipment you are going to need for next season's operations and get the substantial discounts we allow for business placed early.

Your equipment will be better planned because we will have more time to study your needs and it will cost you less because you anticipate your wants. It works both ways to your advantage.

Obsolete machines are costly in the modern packing house where the tendency is toward higher standards of pack at lower per unit cost.

One of our representatives will be glad to discuss details with you—perhaps help you in disposing of any of your equipment you wish to replace.

Florida Citrus Machinery Co.

Division Food Machinery Corp.

B. C. Skinner, Pres.

Dunedin, Florida

process in the least. The common opinion that if a little is good, more is better, does not hold in this case. In fact, it has been demonstrated that much smaller quantities of ethylene, such as 1 part to 10,000 or even much smaller amounts than that, will produce just as good coloring as any larger quantity.

Various methods of introducing the ethylene into the room or enclosure containing the fruit to be colored have been developed. One of the original methods was to attach a hose to the cylinder of ethylene and put the end under the tarpaulin, then open the valve on the cylinder for a short time and allow ethylene to flow into the enclosure. This method is very crude and never should be used for there is no way of knowing how much ethylene is being admitted.

Ethylene shall be admitted to the coloring room or other enclosure by some means which is under positive control and by which the quantity of ethylene being admitted is known with reasonable accuracy.

Ethylene lines should be of iron pipe securely supported so as not to be subject to breakage; where flexible connections in the ethylene lines are necessary hose or tubing may be used if of suitable construction. Hose should be of approved type, and tubing of brass or copper should be not less than 0.049 in. wall thickness.

The following methods of measuring the amount of ethylene are considered satisfactory:

1. A calibrated orifice, of which there are various designs, used where continuous flow of ethylene to the coloring room is desired, as in the "trickle systems." Such orifices, usually operate at a pressure of 2 to 7 oz. per square inch, which pressure is obtained by one or more reducing valves. A manometer is sometimes used to show the pressure in inches of water. One of the methods in use employs a small tubular orifice made as part of a standard gas valve to which it is attached. Another uses a fine hollow wire connecting with an inverted jar partially filled with water through which the gas bubbles up, and then out into the pipe to the coloring room.

The pressure reducing valves are generally of the type used on carbon dioxide cylinders. A second stage of pressure reduction may be obtained by using a second reducing valve of the type used on house service lines of high pressure municipal gas systems.

In systems having a continuous flow of ethylene into the coloring

rooms the percentage of ethylene in the room may safely be figured on the basis of a complete change of air in the room every 24 hours. With an opening in the duct of the air circulating system of at least 2 square inches, as is commonly used, the air is certain to be completely changed in less time than this.

2. A metering regulator, attached to the ethylene cylinder, which indicates the rate of flow of gas; the desired quantity of ethylene being obtained by having the valve open for the sufficient length of time to give that quantity.

The ethylene cylinder should preferably be left in a fixed location with a system of piping connecting the coloring rooms. Ethylene inlets should be located at points in the room as far from electric lights and heaters as is reasonably possible, and never in their immediate vicinity.

3. Measuring tank. The usual size of measuring tank is about 1½ cubic feet so that when ethylene is put into the tank until the pressure gage on the tank reads 10 pounds the tank will contain approximately 1 cubic foot of gas. For larger amounts, the pressure is increased accordingly; twenty pounds giving about 2 cubic feet, etc.

The measuring tank should be provided with a safety valve unless it is equivalent in strength to an ethylene cylinder, which cylinders are tested to 3,360 pounds per square inch. The safety valve should be set at not over 1-5 of the pressure to which the tank has been tested. The test pressure and also the maximum permissible working pressure should be stamped on the tank.

Measuring tanks may be used in a fixed location with pipe connections to measuring rooms or may be made portable. All connections between ethylene cylinder, measuring tank and coloring rooms should be made by iron pipe except when the measuring tank is portable, when flexible hose may be used for coupling the tank to the pipe entering the coloring room.

Although ethylene is nearly of the same density as air and diffuses rapidly, not having a tendency to settle to the floor, rise to the ceiling or otherwise remain in one part of the room or enclosure to which it is introduced, when injected into the coloring room or enclosure in a concentrated dose, as by the measuring tank, an explosive mixture will be formed near the outlet of the hose or pipe. No open flame should therefore ever be permitted in the immediate vicinity of such outlet and electric

fixtures should be located as far from the ethylene outlets as is reasonably possible. Several explosions have occurred as the result of such carelessness as setting a lantern down and injecting the hose from the measuring tank under the tarpaulin and right beside the lighted lantern. The use of lanterns around coloring rooms should be prohibited.

4. Other methods when suitably arranged and safeguarded will also be acceptable.

Heating and General Precautions

Heating of coloring rooms shall be by low pressure steam or hot water pipes or radiators or by approved

(Continued on page 34.)



**Spray for
Aphis & Thrips
on
Citrus Fruits**

**It pays
big dividends
to SPRAY,**

"Black Leaf 40" is the
"Old Reliable" recognized
control for Aphis and Thrips.

**KILLS BY CONTACT
AND FUMES**

"Black Leaf 40" kills not only
by direct contact (hitting) but
in extra measure by the nicotine
fumes. This "extra measure"
of protection you cannot obtain
from the non-violative
insecticides.

Ask your Experiment Station.

Dealers Sell
"BLACK LEAF 40"
in several package sizes

Tobacco By-Products
& Chemical Corp.
Incorporated
Louisville, Ky.

13

"Black Leaf 40"
40% Nicotine

April, 1931

**FORTY-FOURTH ANNUAL
MEETING FLORIDA STATE
HORTICULTURAL SOCIETY**

(Continued from page 5)

Avocados, Papayas and other Sub-Tropical fruits will be discussed in detail. Practically all phases of Florida Horticulture will be touched upon and the grower who comes to get some information that will be of help to him in his work will not go away disappointed.

The meeting opens to Tuesday evening, April 14th at 7:30 P. M. at which time the opening addresses will be made. The meeting continues thru Wednesday and Thursday, with morning, afternoon and evening sessions on each day. Matters of very great importance to the Industry will be considered during this period.

Motorcade

On Friday morning the Society will move by car to points in South Dade County where stops and brief sessions will be held. Leaving the Columbus Hotel at 8:30 A. M. on Friday, April 17th, the first stop will be at Matheson Hammock, a new public park that has recently been opened. The next stop will be at Chapman Field where the first session of the day will be held. Chapman Field is the location of the Plant Introduction Garden of the United States Department of Agriculture. Here the members will see plants from all over the world being grown and propagated for introduction in these United States. Dr. David Fairchild, Mr. Edward Simmonds and their assistants will be on hand to explain the work and to tell the members of some of their most promising material. The trip to this Garden is alone worth the trip to Miami.

Leaving Chapman Field, the Society will move to the Country Club at Homestead for luncheon. After lunch another brief session will be held. This program will be under the auspices of the growers in the Homestead Section and the members can know that this is going to be something good. After this session, the members will be carried to the State Sub-tropical Experiment Station and other points of interest in the Community. A demonstration will be given of cultivation on the rocky soils of South Dade County that will be an eye-opener for those members from the sand hills and hammocks. Those who prefer can join a party that will visit the Royal Palm Hammock which is South of here.

Garden Party

On Wednesday afternoon, April

THE CITRUS INDUSTRY

15th, from 4:30 to 6:00 P. M. the members of the Society will be the guests of Dr. and Mrs. David Fairchild at a Garden Party at their beautiful estate "The Kampong" in Coconut Grove. Here the members will see some ninety varieties of trop-

ical and sub-tropical fruit trees and shrubs gathered from many parts of the world. During the same hours, the neighboring estate of Mrs. Arthur Curtis James will have open house for the members.

(Continued on page 33)

Twenty-nine

More NITRAPO was sold and used during the Spring of 1931
... than ever before

MORE THAN 5 YEARS AGO

the Nitrate Agencies Company advocated the use of mineral ammoniates for the Spring Application. Later, state officials and other interested organizations approved the plan and urged its adoption as a practical method of economizing in costs of grove fertilization.

You, as a successful grower, know that just as it is good practice and practical economy to use mineral ammoniates in the Spring, it is even more important that a highly balanced organic fertilizer be used for the Summer Application. Poorly shaped fruit, a bloom that drops, or trees that do not gain in carrying capacity may be the result of carrying economy too far in fertilizing. What is saved in fertilizer cost may be lost in yield, quality and retarded tree growth.

Fertilizer has many tasks to perform. To do its work well the Summer Application must contain organics. Good organics are obtained in most desirable form in Genuine Peruvian Guano.

Genuine Peruvian Guano is the most economical ingredient in any Summer Fertilizer. It aids in maturing well shaped, fine textured fruit. It keeps trees healthy and vigorous. It builds up strength for your 1932 crop.

Groves fertilized according to the NACO PLAN are now setting their fourth consecutive large crop. The bloom sticks where Nitrapo has been used and the fruit develops a finer quality where NACO Brand mixtures are used in the Summer . . . year after year these are the results when growers follow the NACO PLAN.

Never before has it been as important to fertilize wisely as it is today. Planned fertilizing is highly profitable. Our field representatives will gladly help you develop a plan that applies to your particular grove. Growers in general have found their recommendations well worth while.

Join the fast growing number of successful grove owners . . . men and women . . . who are following the NACO PLAN for Citrus Fertilizing.

**NITRATE AGENCIES COMPANY
1401-1407 LYNCH BUILDING
JACKSONVILLE, FLORIDA**



THE GROWERS' OWN PAGE

"IT'S A GREAT AGE"

We are living in a very peculiar age,—an age when it is very unpopular to disagree with your fellow-man.

These days, when our City, County and State officers or Civic Bodies meet to discuss questions of vital interest and importance to the people, whom they are trying to serve, the "Ring-leader" makes a motion, same is seconded and "over she goes" with very little argument, frequently without a dissenting vote. For example, take this most important question of "GREEN FRUIT", which a Committee of fine men and growers met here at Lakeland a few days ago to thresh out. No doubt, they worked hard and harmoniously, honestly and sincerely, but did they get anywhere?

We growers know that this Green Fruit situation is intolerable and that it has cost the growers millions—millions that Florida people need as they never needed before.

This valuable Green Fruit Committee offered some suggestions, some changes in the law. Can it be handled altogether by law? Do we need and require Federal aid to tell us when to ship or not ship? Do we need to draft men from Bangor, Maine, Seattle, Washington, or any other "foreign port"? Do these men know more about when fruit is ripe than those who have grown fruit all of their lives? Inasmuch as there is no Federal law on Green Fruit, can the U. S. Agricultural Department be more concerned about the Green Fruit proposition than the producer?

Now, I am not questioning the honesty or integrity of these Inspectors or their managers, but I would have you ask yourself this question, i. e., if you were running a mercantile business and had a financial partner and a clerk, who would you expect to be the most loyal and concerned in the business, the partner or the clerk? This also applies to the selling end of our fruit.

I note that Commissioner Mayo recommends 155 cubic centimeters juice content on grapefruit, so if they are full of juice, they require no test as to sugar or acid. Now, I may not "understand all that I know" about this "cubic centimeter business", but I do know this,—that, in my many years of experience in growing citrus fruits, I have often found or-

This department is devoted to the growers, for their use in giving expression to their views and a discussion of growers' problems. Any grower is welcome to make use of this department for the discussion of topics of interest. The only requirements are that the articles must be on some subject of general interest, must be reasonably short and must be free from personalities. The editor assumes no responsibility for views expressed, nor does publication imply endorsement of the conclusions presented.

anges and grapefruit that appeared to be ripe and were almost bursting open with juice, but this same fruit would "make a pig squeal" and "a sour gnaw go blind".

I am in sympathy with the Green Fruit Committee. They have a hard job, and they will eventually find that it will take something other than changing or making laws to prohibit Green Fruit leaving the good, old State of Florida.

Signed: R. M. MARLER,
Lakeland, Florida.

Nashua, New Hampshire
February 26, 1931

Mr. S. L. Frisbie, President,
The Citrus Industry
Tampa, Florida.
Dear Sir:-

The article appearing in the February issue of The Citrus Industry, heralding the citrus situation in the Union of South Africa, is just splendid and brings to mind an article appearing in your June issue quoting H. Clark Powell, commenting on the multiplicity of brands, and which also includes the methods employed in the Union of South Africa, and which points were mighty well taken.

In the article appearing in the February issue reference is made to fruit stamping as being considered by the shippers in South Africa which prompts the writer to inform you that for the past few years we have been shipping stamping machines to South Africa. Some of the shippers have sent us repeat orders, and among those is the Sundays River Citrus Cooperative Company, Ltd., of Cape Town, South Africa, who are ordering their fifth machine saying the following in their letter: "We would state that we are well satisfied with the working of your machines; they have given us no trouble whatsoever, and the last two arrived in perfect condition, the packing being excellent."

We have an inquiry from a Cooperative Organization in South Africa,

stating that they have thirty-six houses and are desirous of equipping them with stamping machines.

We are also shipping machines to Spain, and have just received another order from a customer who previously purchased two, and who is so well pleased with our machines that he would like to represent us in his territory.

That foreign shippers have taken up the stamping of fruit would indicate that the shipping of upward of six million boxes of fruit from this country into foreign ports last year, is making tremendous inroads into their territories, and it naturally behooves them to adopt like methods of identifying their product.

The absence of trademark on Florida fruit is deplorable to say the least. It would seem that there is scarcely ten percent of Florida fruit carrying the stamp, and until they can see their way clear to adopt such methods as have been so satisfactory and profitable for the California growers they will continue to suffer the demoralizing trade conditions now existing in New England.

With cordial good wishes, we are,

Yours very truly,

F. J. SEVIGNE MACHINE CO.
(Signed) F. J. Sevigne

CITRUS FRUIT ACREAGE OF UNITED STATES IS 691,663

The total citrus fruit acreage of the U. S. is 691,663 acres, according to the estimate prepared April 1930, by Robert W. Hodgson, professor of citriculture, university of California. Of this total, California is credited with 276,292 acres, or 40 per cent of the total acres, yet she accounts for 63.7 per cent of the total production. Florida with 314,665 acres, or 45 per cent of the total acres produces only 33.9 per cent of the citrus fruit produced in the United States. Less than 10 per cent of California's acreage is non-bearing while close to 40 per cent of Florida's acreage has yet to come to bearing.

ORNAMENTAL TREES

Juniper — Common (*Juniperus communis*)
Jerusalem Thorn (*Parkinsonia aculeata*)
Koelreuteria formosana
Kumquat (*Citrus sp.*)

Florida's own dependable
spray for control of
red scale-

Fico==60



A full line of spray materials and appliances,
and dusting sulphur

Florida Insecticide Company
Apopka, Florida

Howey Claims Process For Storing Citrus Without Refrigeration

The Howey Tribune in its March issue makes the following announcement:

W. J. Howey, founder of the 60,000 acre citrus development that bears his name, announces that he has obtained the rights to a recently perfected process for storing without refrigeration citrus fruits and their by-products.

"In my estimation," said Mr. Howey, "if in practice this process proves successful, it will be the most revolutionary development in the history of the citrus industry. It indicates stiff strengthening of the citrus market and will require operation of packing plants practically 12 months in the year. This accomplishment requires no stretch of the imagination to anticipate the new wealth thus assured. It should make business good in Florida.

"The dollar-a-box fruit of the winter season will become \$6 and \$8 a box fruit in July, August, and September, and incidentally, this should solve our green fruit problem.

"Another illustration comes with the Valencia orange crop. This late season fruit which now has the high color so much desired from a marketable standpoint, is inclined, despite its ripeness, to turn back to a green color and to roughen up. This new anti-oxidation process insures the high color of Valencias, adding certainly at least 50 cents a box on the Valencia sales in May and June."

Mr. Howey has obtained control of the rights in Florida and Texas, and at his own expense is installing at his Howey-in-the-Hills development the first of what is expected to be innumerable huge steel tank-like storage containers, each capable of holding 1,000 field boxes of citrus fruit. These steel containers have been assembled by Bird-Potts Company, Inc., of Atlanta. They are being placed near the packing plant at Howey-in-the-Hills and the oranges and grapefruit thus stored will be released to the market beginning about the 1st of August. Placing of the fruit in these huge steel storage receptacles will be witnessed by scientists and men prominent in citrus

production and distribution.

"This process involves the use of no refrigerant whatever," explained John F. Rudd, inventor of the process, who has made application for patent rights. "The method used has been shown completely to prevent oxidation; and fruit subjected to this treatment has come out of the container exactly as it went in, unchanged in color or quality and in prime condition. By this process grapefruit and oranges picked during the winter can be taken out of these storage containers and run through the packing house, to be shipped north with the same degree of freshness as if just gathered from the groves."

It is asserted that although this non-oxidizing procedure keeps the fruit in much more perfect condition than any known refrigerating storage, the cost is insignificant compared with the cold methods.

"This new method," said Mr. Howey, "will free the grower from a restricted market and enable him, by this process which expells all air and all free oxygen, to carry mid-season fruit over to mid-summer.

"It is not my purpose to monopolize the process at Howey-in-the-Hills. Instead I wish to offer it as a benefit to the citrus industry and am prepared to issue licenses to competent individuals or responsible organiza-

tions so that our packing houses may be kept busy in summer as they are in winter."

STATEMENT BY PARK TRAMMEL

Realizing that the greatest obstacle to the success of the Florida growers of vegetables and fruits was the rapidly increasing competition from foreign products, I worked with all my ability and energy to obtain a reasonably high tariff in the Tariff Bill of 1930 on foreign products competing with our Florida vegetables and fruits. When this bill was enacted into law, it embraced substantial tariff duties on products which were most threatening and damaging to the farm and grove industries of our State. Now those who would for their own selfish ends, take away from us our home market are seeking before the Federal Tariff Commission to have reduced the tariff secured in the Tariff Act of 1930 on our vegetables and fruits. In view of the effort being made, I consider it very essential for the Florida people interested directly or indirectly in having maintained the present duties on fruits and vegetables to take the necessary steps to vigorously oppose those who seek a reduction before the Tariff Commissions.

(Signed)—Park Trammell.



April, 1931

**FORTY-FOURTH ANNUAL
MEETING FLORIDA STATE
HORTICULTURAL SOCIETY**

(Continued from page 29)

Visit to Flying Fields

On Thursday afternoon at 4:00 P. M. the members will be given the opportunity to visit the Pan-American Flying Fields to see something of the manner in which traffic is handled.

Florida Rose Society

The Florida Rose Society which is one of the youngest of the State Societies was organized at the Cocoa-Rockledge meeting of the Society in 1926. It has had a rather checkered career but is coming up strong at this meeting. It will hold a separate session, the time and program for which will be announced later.

State Rose Show

The Sixth Annual State Rose Show will be staged in the parlors of the Columbus Hotel, Miami, on April 15th and 16th. The director of the 1931 Show is Mary Drake of Miami and the Show is under the auspices of the Florida Rose Society and the Florida State Horticultural Society.

From the interest that has been

THE CITRUS INDUSTRY

shown in different parts of the State in this Show it is going to exceed anything of its kind that has been held and will be well worth seeing by those who are interested in roses.

The members of the Society are invited to send single specimens or best six specimens of their Red, Yellow, Pink or White roses to Florida State Rose Show, Columbus Hotel, Miami, to be entered in the Show. Send them prepaid and so as to reach Miami on Wednesday morning, April 15th.

Interest your local Garden Club in sending a display exhibit. Cash prizes are being offered.

Spend the Week in Miami

Members are urged to make their arrangements to spend the week in Miami. Leave home Monday and return Saturday. Take the family along. There are many things of interest in the Miami and Miami Beach sections so that time will not hang heavy. There are hotel accommodations very conveniently located, to suit every pocket book.

Pan-American Day

Tuesday, April 14th, has been designated as Pan-American Day, a day set aside to celebrate the good will

Thirty-three

relations between the United States and the South American Countries. The City of Miami is celebrating this day by an aerial play during which the flags of South American Countries, attached to parachutes, will be released over the city. From 8:00 to 10:00 P. M. a pageant will be staged in the Bay Front Park that will portray periods of history of the South American Countries. From 10:00 to 12:00 P. M. there will be street dances in costume.

To give the members of the Society the opportunity to participate in this celebration, the opening meeting of the Society will be called to order in the dining room of the Columbus Hotel on Tuesday evening, April 14 at 7:30 P. M. and will immediately adjourn to open again at 9:30 A. M. on Wednesday morning April 15th.

Pay Annual Dues

Those who have not remitted their annual dues for 1931 may do so at once by addressing their remittance to N. A. Reasoner, Treasurer Oneco, Florida. No letter is necessary. Just post your personal check for \$2.00 in the envelope and mail. Mr. Reasoner will do the rest.

**RIPEN
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BLANCH**



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WITH ETHYLENE**

This free book shows you how Ethylene:

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| 6 Is easy to use | |

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**Fertilizer Costs
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The cost of fertilizer per ton may mean nothing at all, but the result of having used the fertilizer just suited to your requirements means everything.

That's why so many of our customers are those who have purchased their fertilizer requirements from us year after year.

They know that our field experts will advise them honestly and expertly as to the sort of fertilizer required to secure the best results for their particular grove.

They know that this company never sells anyone with the thought in mind that that single sale will conclude our relationship. With us the initial sale is simply the entering wedge to a long and pleasant relationship builded upon a mutual confidence and respect.

If you don't know us well as you should we will both profit measurably by becoming better acquainted.

West Coast Fertilizer customers
raise better fruit.

West Coast Fertilizer Co.

303 Zack Street

Tampa, Florida

COLORING FRUITS

AND VEGETABLES

(Continued from page 28.)

electric heaters. Portable kerosene or gasoline heaters should never be used in coloring rooms. Coils or pipes may be located in the coloring room or in a duct of the air circulating system but the ordinary precaution of keeping heating pipes from direct contact with wood-work should be followed. Steam and hot water pipes shall be kept clear at least one inch from all woodwork.

Open lights and fire should not be permitted in the vicinity of any room where ethylene is stored or used. "No smoking" signs should be posted where ethylene is stored or used and the rule strictly enforced.

CLASSIFIED

Advertisements

The rate for advertisements of this nature is only five cents per word for each insertion. You may count the number of words you have, multiply it by five, and you will have the cost of the advertisement for one insertion. Multiply this by the total number of insertions desired and you will have the total cost. This rate is so low that we cannot charge classified accounts, and would, therefore, appreciate a remittance with order. No advertisement accepted for less than 50 cents.

REAL ESTATE

FOR SALE—By owner, eighty acres, two-year-old best looking grove at reasonable price. Howey-in-the-Hills. For further information write "A. Z." P. O. Box 1261, Orlando, Florida.

FOR SALE—Pineapple land in winterless Florida. \$15 an acre. Almont Ake, Venus, Fla.

WANT TO SELL HALF INTEREST IN FIFTEEN ACRE SATSUMA BEARING GROVE ON HIGHWAY NEAR PANAMA CITY, ROBT. LAMBERT, OWNER. FOUNTAIN, FLA.

SATSUMA BUDWOOD from Bearing Trees. Hills Fruit Farm, Panama City, Fla.

WANTED—To hear from owner having good farm for sale. Cash price, particulars. John Black, Chippewa Falls, Wisconsin.

REPRESENTATIVE for Counties South of Polk in Sale of Insecticides and Machines. Previous sales experience and knowledge

of citrus vegetable industry necessary. State experience, references, salary expected, etc. to Box 1537, Orlando, Florida.

MISCELLANEOUS

SEEDS—ROUGH LEMON, SOUR ORANGE, GLEOPATRA. Pure, fresh, good germination. Also seedlings lineout size. De Soto Nurseries, DeSoto City, Fla.

HIGH BLOOD PRESSURE easily, inexpensively overcome, without drugs. Send ad-

THE CITRUS INDUSTRY

dress. Dr. J. B. Stokes, Mohawk, Fla.

SCENIC HIGHWAY NURSERIES has a large stock of early and late grapefruit and oranges. One, two and three year buds. This nursery has been operated since 1883 by G. H. Gibbons, Waverly, Fla.

FOR SALE OR TRADE—Good horse, single wagon and two sets harness. J. P. Lynch, Groveland, Fla.

TUNG OIL TREES—Cluster or Single variety. A limited number of trees will be sold for this winter's planting. Reservations will be made now. 40c each less than 100 trees; 30c each 100 or more. Plant & Chemical Research Company, Research Building, Polk City, Florida.

RAISE PIGEONS—Profit and pleasure. Illustrated descriptive catalogue postage six cents. Vrana Farms, Box 314a, Clayton, Missouri.

TUNG OIL TREES—Cluster variety. Vigorous. Forty cents each. Lots of hundred 30 cents each. Hunt Bros., Inc., Lake Wales, Fla.

ORANGE PACKERS ATTENTION—Two chemical transparent flexible orange coating processes for sale; royalty or license basis. Patent pending. Dr. C. V. Berry, 251 West 111th Street, New York City.

PUREBRED PULLETS FOR SALE—White Leghorns and Anconas ready to ship. Barred Rocks and R. I. Reds shortly. Several hundred yearling White Leghorn hens now laying 70%. Write or wire for prices. C. A. Norman, Dr. 1440, Knoxville, Tenn.

LAREDO SOY BEANS, considered free from nematode, excellent for hay and soil improvement. Write the Baldwin County Seed Growers Association, Loxley, Alabama, for prices.

AVOCADOS - SEED — Grafted. Reliable bearers only. John B. Beach, West Palm Beach, Florida.

WANTED—To hear from owner of land for sale. O. Hawley, Baldwin, Wis.

C. D. Kime

Consulting
Horticulturist

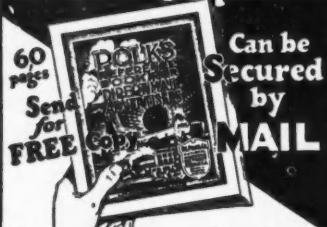
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